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DENYING DISASTER: A MODEST PROPOSAL FOR TRANSITIONING FROM CLIMATE CHANGE DENIAL CULTURE IN THE SOUTHEASTERN UNITED STATES

Blake Hudson * and *Evan Spencer* **

I. INTRODUCTION

The Southeastern United States (Southeast) is a complex and often misunderstood region of the country. Though election maps show regions of the nation as either red or blue, a deeper look reveals a mix of political values.¹ Persistent, but sometimes relatively slight, majorities are what make regions “reliably” red or blue. Even in the reliably red Southeast, urban areas tend to be blue while rural areas tend to be red. The proportion of blue or red in the region is affected by a complex suite of cultural factors like race, religion, the urban-rural divide, among others. Drawing stark conclusions about a region’s policy preferences based upon its status as red or blue is risky, however, and can result in oversimplification of the true state of affairs. Variations within blue and red voter blocks also manifest on important issues of policy, due to often-overlooked cultural factors. Such is the case on the issue of climate change. As a result, southern governments are particularly reticent to enact climate-related policies, and denial of basic climate science is especially acute in the region—with both major political parties playing a role. This denial is notwithstanding the fact that southeastern states are set to suffer more economic damage from climate change than any other region of the country.

According to the most recent Yale Climate Change Communication “Partisan Climate Opinion Maps,” 65% of Democrats nationally believe

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1. 2016 US Presidential Election Map by County & Vote Share, BRILLIANTMAPS (Nov. 29, 2016), <https://brilliantmaps.com/2016-county-election-map/>.

global warming is mostly caused by human activities,² while 73% are worried about global warming.³ Compare this to the 31% of Republicans nationally who believe global warming is mostly caused by human activities,⁴ and 32% of Republicans who are worried about it.⁵ Overall, less than half of Americans in the heartland (which tend to be red states)⁶ believe global warming is caused by human activities, while more than half of Americans along the east and west coasts (which tend to be blue states) believe it is.⁷ These percentages fit the conventional narrative that Democrats and city-dwellers are generally more supportive of climate action, while Republicans and rural-dwellers are generally less.

But digging deeper yields some important insights into why southeastern states are less likely to take climate action than other regions. On the Yale survey questions of “is global warming happening,” “is global warming mostly caused by human activities,” “do most scientists think global warming is happening,” and “are you worried about global warming,” Republicans in the Southeast vary in their beliefs to no greater or lesser degree than Republicans in other regions of the nation.⁸ In other

2. Matto Mildenerger et al., *Estimated % of Registered Democrats Who Think Global Warming is Mostly Caused by Human Activities, 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=human&group=dem&type=value&geo=national> (last visited Oct. 20, 2018).

3. *Id.*

4. Matto Mildenerger et al., *Estimated % of Registered Republicans Who Think Global Warming is Mostly Caused by Human Activities, 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=human&group=rep&type=value&geo=national> (last visited Oct. 20, 2018).

5. *Id.*

6. *2016 Presidential Election Results, 270ToWin* (July 20, 2017, 2:15 PM), <https://www.270towin.com/maps/2016-actual-electoral-map>.

7. Jennifer Marlon et al., *Estimated % of Adults Who Think Global Warming is Mostly Caused by Human Activities, 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/?est=human&type=value&geo=county> (last visited Oct. 21, 2018).

8. See Matto Mildenerger et al., *Adults (Republicans) Who Think Global Warming is Happening, Difference from National Average (50%), 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=happening&group=rep&type=diff&geo=cd> (last visited Oct. 20, 2018); Matto Mildenerger et al., *Adults (Republicans) Who Think Global Warming is Mostly Caused by Human Activities, Difference from National Average (31%), 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=human&group=rep&type=diff&geo=cd> (last visited Oct. 20, 2018); Matto Mildenerger et al., *Adults (Republicans) Who Believe Most Scientists Think Global Warming is Happening, Difference from National Average (33%), 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=consensus&group=rep&type=diff&geo=cd> (last visited Oct. 20, 2018); Matto Mildenerger et al., *Adults (Republicans) Who Are Worried About Global Warming, Difference from National Average (32%), 2016*, YALE PROGRAM ON

words, nothing singles out southern Republicans as being particularly more or less antagonistic to climate science and policy relative to their Republican peers in other regions. Southern Democrats are another story, however. On each of these questions, Democrats in the Southeast are anywhere from 6 to 22% less likely than Democrats in other parts of the nation to believe global warming is happening,⁹ that it is mostly caused by human activities,¹⁰ that scientists believe it is happening,¹¹ or to be worried about it.¹² In fact, while Republicans in the Southeast (at least in states east of the Mississippi River) are *more* likely to support regulating CO₂ as a pollutant than Republicans in the Midwest and West,¹³ Democrats are up to 12% *less* likely than Democrats in virtually all other regions of the country to support CO₂ regulation.¹⁴

So what happens when Republicans in the Southeast hold par for the course with other Republicans nationally in their views on climate, while Democrats in the Southeast are more antagonistic toward climate science and policy than Democrats in other regions of the country? The result is a section of the country mired in climate denial. Though there are voters supporting climate action in the Southeast, their policy preferences are constrained because state legislatures in the region, as well as federal

CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=worried&group=rep&type=diff&geo=cd> (last visited Oct. 20, 2018).

9. Matto Mildenerger et al., *Adults (Democrats) Who Think Global Warming is Happening, Difference from National Average (82%), 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=happening&group=dem&type=diff&geo=cd> (last visited Oct. 20, 2018).

10. Matto Mildenerger et al., *Adults (Democrats) Who Think Global Warming is Mostly Caused by Human Activities, Difference from National Average (65%), 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=human&group=dem&type=diff&geo=cd> (last visited Oct. 20, 2018) [hereinafter *Adults (Democrats) Who Think Global Warming is Mostly Caused by Human Activities*].

11. Matto Mildenerger et al., *Adults (Democrats) Who Believe Most Scientists Think Global Warming is Happening, Difference from National Average (64%), 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=consensus&group=dem&type=diff&geo=cd> (last visited Oct. 20, 2018).

12. *Adults (Democrats) Who Think Global Warming is Mostly Caused by Human Activities*, *supra* note 10.

13. Matto Mildenerger et al., *Estimated % of Registered Democrats Who Believe Most Scientists Think Global Warming Is Happening, 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=consensus&group=dem&type=value&geo=cd>, (last visited Oct. 19, 2018).

14. Matto Mildenerger et al., *Adults (Democrats) Who Are Worried About Global Warming, Difference from National Average (73%), 2016*, YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/visualizations-data/partisan-maps-2016/?est=worried&group=dem&type=diff&geo=cd> (last visited Oct. 19, 2018).

representatives sent to Congress from those states, are disinclined to take action—a problem attributable to voters of both parties. Voters who, at the least, do not value action on climate change, and, at the most, outright deny the existence of—or human role in—climate change, simply outweigh climate action voters in state and national elections.

Indeed, religion, political philosophy (distinct from “party affiliation”), race, and other cultural attributes of southerners heavily influence how they interpret and process information regarding climate change, the level of trust they maintain in the sources of that information, and their willingness to take action based upon it. Currently, that mix of attributes tends toward a majority of southerners not having an interest in proactive climate policy, thus denying the disaster that is already befalling them. Central to this denial is the rejection of basic climate change science, and the consequent failure of elected officials to address it.

This phenomenon has accelerated in the United States over the last decade or so, though the seeds of its origin were planted long ago.¹⁵ As discussed below, the region of the United States projected to experience the most economic and physical harm due to climate change is the Southeastern United States.¹⁶ The Southeast will become even more economically depressed and its people will be harmed in very direct ways—such as through the loss of property, forced migration, and even loss of life. Such a large region of the United States taking a position so contrary to science—and more importantly so contrary to its own well-being—has undermined development of policies at both the regional and national levels to mitigate and adapt to climate change.

This article analyzes this phenomenon by describing the effects of climate change on the Southeast in Part II, from fire to flooding.¹⁷ Part III then discusses a recent study demonstrating the disproportionate climate change-related economic and health impacts on the Southeast relative to other regions of the United States. Part IV next diagnoses some of the cultural and sociopolitical causes for climate denial in the Southeast.¹⁸ Finally, Part V proposes a potential avenue for addressing the disconnect between southern political culture and climate change, namely, what I refer

15. At least one deeply red state, Alaska, has adopted a climate action mentality in the face of climate denial persistent in most red states, placing Alaska at the forefront of climate change and energy policy. In this way, Alaska may provide a model for southeastern states if it can move past climate denial. See Brad Plumer, *‘Impossible to Ignore’: Why Alaska Is Crafting a Plan to Fight Climate Change*, N.Y. TIMES (May 15, 2018), <https://www.nytimes.com/2018/05/15/climate/alaska-climate-change.html>.

16. Brad Plumer & Nadja Popovich, *As Climate Changes, Southern States Will Suffer More Than Others*, N.Y. TIMES (June 29, 2017), <https://www.nytimes.com/interactive/2017/06/29/climate/southern-states-worse-climate-effects.html>.

17. See *infra* Part II.

18. See *infra* Part III; See *infra* Part IV.

to as “associational messaging” through mass media.¹⁹ Identification of mechanisms for influencing southern culture to embrace climate action—without simply relying on obliteration of southern culture or hoping to outnumber current anti-climate voters with voters already inclined to support climate action—is an important step to ushering in substantial and long-lasting policies to address climate change in the United States.

II. CLIMATE EFFECTS IN THE SOUTHEASTERN UNITED STATES

Both of the authors are from the Southeast—Hudson from Alabama and Spencer from Mississippi. Hudson grew up in a small rural town in Alabama on forestland that had been in his family for generations. From an early age he was involved in many of the management decisions on this property, working with forest industry employees to help his family cultivate the resource for an economic livelihood. Hudson’s family has now shifted to preserving conservation values and forest ecosystem services on the property. This piece of land was very much the impetus for Hudson entering the legal profession and writing about natural resources management and its intersection with land use. It also was a portal through which to view the intersection between a region’s politics, views on private property rights, religion, and other cultural attributes, and its views on environmental, natural resources, and land use law and policy.

While Spencer grew up in a more urban environment, in recent years, he has worked on federal farm policy with agricultural producers and marketers across the Southeast. It was this interaction with predominately rural, climate impacted, and politically involved voters that led to an interest in the nexus between objective science and subjective self-governance. The deeply ingrained notions of conservation tied to farm policy and rural sporting culture interacting with the equally ingrained economics of self-preservation and free markets provide the context within which Spencer considers the relationship between climate science and southern culture.

The last few years have been particularly difficult for the Southeast, in no small part due to the increasingly recognizable effects of climate change. In fact, the Southeast leads the nation in total number of billion-plus dollar disaster events occurring from 1980 to 2014.²⁰ The state of Texas leads the way, with ninety-four such events—twenty-five more than the next closest state.²¹ This is even before you take into account the damage caused by 2017’s Hurricane Harvey—which was the most costly natural disaster in the

19. See *infra* Part V.

20. Seth Cline, *Climate Change’s Southern Salvo*, U.S. NEWS (Sept. 22, 2017, 3:06 PM), <https://www.usnews.com/news/best-states/articles/2017-09-22/what-harvey-revealed-about-climate-change-in-the-south>.

21. *Id.*

United States in 2017.²² Climate change is expected to exacerbate these disaster events, as the following sections describe.

A. Wildfires

Climate change is expected to make the Southeast warmer and increase the length and frequency of drought conditions, setting the stage for an increase in wildfires. The southeastern United States, perhaps surprisingly, leads the nation in the number of wildfires per year.²³ The region averaged approximately 45,000 fires per year at the turn of this century.²⁴ The southern forest fires of 2016 demonstrate what may be on the horizon more frequently throughout the southern forest landscape. The most prominent of those fires was the Chimney Top fire that destroyed much of the resort towns of Gatlinburg and Pigeon Forge, Tennessee, causing tens of thousands of people to evacuate, damaging 2400 structures, and killing many people.²⁵ In 2016, wildfires burned over 1.4 million acres across the Southeast.²⁶

In fact, major fires have continually swept across the Southeast the last two decades, causing great damage and hundreds of thousands of acres burned. A single recent wildfire destroyed more than 600,000 acres in Florida and Georgia²⁷ and caused \$58 million of timber loss.²⁸ In 2008, fires in North Carolina and South Carolina burned thousands of acres, destroyed or damaged 176 homes and caused economic losses in excess of \$50 million.²⁹

22. Chris Mooney, *Hurricane Harvey Was Year's Costliest U.S. Disaster at \$125 Billion in Damages*, TEX. TRIB. (Jan. 8, 2018, 11:00 AM), <https://www.texastribune.org/2018/01/08/hurricane-harvey-was-years-costliest-us-disaster-125-billion-damages/>.

23. Robert J. Mitchell et al., *Future Climate and Fire Interactions in the Southeastern Region of the United States*, 316 FOREST ECOLOGY & MGMT. 316, 317 (2014).

24. DAVID N. WEAR & JOHN G. GREIS, THE SOUTHERN FOREST FUTURES PROJECT: TECHNICAL REPORT, U.S. DEP'T OF AGRIC. 509 (Aug. 2013), https://www.srs.fs.fed.us/pubs/gtr/gtr_srs178.pdf.

25. *Mayor: Three Dead in Tennessee Wildfires*, CBS NEWS (Nov. 29, 2017), <https://www.cbsnews.com/news/gatlinburg-fire-pigeon-forge-evacuated-tennessee/> (14,000 people evacuated); Steve Ahillen, *Chimney Tops Trail in Smokies, Where Gatlinburg Fire Started, to Reopen*, KNOX NEWS (Oct. 3, 2017, 3:29 PM), <https://www.knoxnews.com/story/news/local/tennessee/gatlinburg/2017/10/03/chimney-tops-trail-smokies-where-gatlinburg-wildfire-started-reopen/728523001/>.

26. Lyndsey Gilpin, *The Southeast is Becoming a Wildfire Hotspot*, FIVE THIRTY EIGHT (Dec. 8, 2016, 11:23 AM), <https://fivethirtyeight.com/features/the-southeast-is-becoming-a-wildfire-hotspot/>.

27. WEAR & GREIS, *supra* note 24, at 510.

28. Mitchell et al., *supra* note 23, at 319.

29. WEAR & GREIS, *supra* note 24, at 510.

And of course, the risk of wildfire in the Southeast is accentuated because of high population densities in the region. Eighty million people live in the Southeast and it has the highest proportion of population of any region at the wildland-urban interface.³⁰ More than 70% of the 50,000 United States communities on the wildland-urban interface designated as “at risk” for fire are in the southeastern states.³¹

So, how does climate change affect an already combustible situation? Primarily through temperature increases, changes in precipitation and resulting drought conditions, and through a variety of secondary effects. Climate change is expected to lead to increased temperatures in the region, and models predict air temperature to increase by 1.5 to 3 degrees Celsius in the Southeast over the next fifty years.³² The projected number of days above ninety degrees Fahrenheit will increase from approximately seventy-five days on average across the Southeast in the 1960’s and 1970’s to over 150 days above ninety degrees by the end of this century.³³

Temperature increases have an effect on wildfires independent of effects on precipitation patterns, since rising temperatures increase evapotranspiration, which causes trees and other plants to pull even more moisture from the soil.³⁴ This, in turn, means a dryer overall environment and increased risk of wildfire. One of the most startling statements from one recent climate report—especially given the Southeast’s status as one of the most biodiverse regions in the United States—is that “the potential savannification of the [southeast], in which forests are converted into more open woodlands due to a combination of hotter and drier conditions, could be one of the most profound potential climate change impacts in the United States.”³⁵

Climate models are less clear on overall precipitation patterns. Some project a wetter Southeast overall, whereas others project a dryer one.³⁶ Regardless, there will be more variability in precipitation patterns and extended periods of drought, like the United States saw in 2016, which, in turn, will lead to increased wildfire activity. Since the 1980s, droughts have become more frequent in the Southeast. Perhaps most importantly, it will be

30. Gilpin, *supra* note 26.

31. WEAR & GREIS, *supra* note 24, at 531.

32. Mitchell et al., *supra* note 23, at 319.

33. Tom DeGomez, *Invasives in Southern U.S. Forests*, EXTENSION (May 16, 2011), <http://articles.extension.org/pages/58377/invasives-in-southern-us-forests>.

34. Steven McNulty et. al., *Forests and Climate Change in the Southeastern USA*, in CLIMATE OF THE SOUTHEAST UNITED STATES 166 (Keith T. Ingram et. al. ed., 2013).

35. *Id.*

36. Mitchell et al., *supra* note 23, at 320.

drier for longer when it is dry, and wetter for longer when it is wet.³⁷ In 2016 it was projected that forty-seven million people lived in drought-affected areas in the southeastern United States.³⁸ In 2016, Tuscaloosa, Alabama went sixty-five days without rain—the previous record was thirty-seven days.³⁹ Cedartown, Georgia went ninety-four days without rain—the previous record was thirty-six days.⁴⁰

In addition to affecting temperature and precipitation, climate change will contribute to a number of additional effects—insect and pest outbreaks, for example. Climate change leads to warmer temperatures which contributes to fewer insect die-offs in the winter and more insect outbreaks.⁴¹ The woolly adelgid, for example, in the Great Smoky Mountains sucks sap from hemlocks, killing them, leaving behind more standing dead trees which are then more susceptible to fire.⁴² The hemlock is on the verge of extinction throughout the Southeast as a result.⁴³

An inability of tree species to migrate along with rapid habitat shifts will also leave more forests susceptible to fire. Migration of tree species following the last ice age occurred at much slower rates than is needed for forests to keep pace with current and future climate change.⁴⁴ Molecular work using chloroplast DNA indicates that these paleo-rates were less than 100 meters per year, while current global temperatures are shifting poleward at rates exceeding 1000 meters per year.⁴⁵ This will leave more dead trees in the wake of habitat shifts.

The wildland-urban interface and longer drought periods also create a cyclical problem of constraining prescribed burning—that is, burning forestland, or rather the forest floor, on purpose to mitigate wildfire potential (and achieve a number of other silvicultural goals). Each year approximately eight million acres of land are treated with prescribed fire in the Southeast—more than in all other United States regions combined.⁴⁶ Prescribed burning

37. Nsikan Akpan, *How Big Droughts, Forest Fires Could be the New Normal in Appalachia*, PBS NEWS HOUR (Nov. 22, 2016, 6:51 PM), <https://www.pbs.org/newshour/science/widespread-forest-fires-claims-may-signal-new-normal-appalachian-mountains>.

38. *Id.*

39. Andrea Thompson, *What a Warmer Future Means for Southeastern Wildfires*, CLIMATE CENT. (Nov. 23, 2016), <http://www.climatecentral.org/news/warmer-future-southeastern-wildfires-20912>.

40. *Id.*

41. *Hemlocks Declining Fast*, COMPASS, Feb. 2008, at 24.

42. Gilpin, *supra* note 26.

43. John Platt, *Hemlock Extinction Looms Over Tennessee Forests*, EXTINCTION COUNTDOWN (Oct. 11, 2013), <https://blogs.scientificamerican.com/extinction-countdown/hemlock-extinction-looms-over-tennessee-forests/>.

44. McNulty et al., *supra* note 34, at 172.

45. *Id.*

46. WEAR & GREIS, *supra* note 24, at 509.

is necessary to keep fuels from building up and to prevent more catastrophic wildfires.⁴⁷ But because population in the Southeast is increasing at a rate faster than any other region,⁴⁸ more people will be at the interface.⁴⁹ The concern is that prescribed burns will escape and damage property, thereby chilling its use in forest management. Longer drought periods mean that there are fewer windows to perform prescribed burns, because the risk of escape during drought is increased. Longer wet periods also mean there will be fewer windows to set fires that will actually burn.

Ultimately, studies project that the annual acreage burned by wildfires will increase by 4% across the Southeast by mid-century, and far greater by the end of the century,⁵⁰ with the severity of wildfire increasing by over 10%.⁵¹ Some models project that the fire seasons for the entire southeastern United States will be two to three months longer on average by the end of the century.⁵²

B. Hurricanes and Flooding

Wildfires, of course, are not the only disasters that plague the Southeast. Three of the top five costliest hurricanes in history occurred in 2017, two of them affecting the Gulf of Mexico and southeastern states.⁵³ Consider that a single hurricane can convert the equivalent of 10% of the total annual carbon sequestered by forests across the United States into dead and downed biomass in southern forests.⁵⁴ Not only does the available carbon sequestration capacity decrease through these events, other types of disasters are exacerbated since, for instance, downed trees increase fuel loads when wildfire breaks out.

47. *Prescribed Burning Reduces Wildfire Fuels*, U.S. NAT'L PARK SERV., <https://www.nps.gov/articles/wildland-fire-rxfire-reduces-fuel-sagu-2013.htm> (last visited Dec. 14, 2017).

48. *The South Is Home to 10 of the 15 Fastest-Growing Large Cities*, U.S. CENSUS BUREAU (May 25, 2017), <https://www.census.gov/newsroom/press-releases/2017/cb17-81-population-estimates-subcounty.html>.

49. Tim Henderson, *Americans Are Moving South, West Again*, PEW CHARITABLE TR. (Jan. 8, 2016), <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2016/01/08/americans-are-moving-south-west-again>.

50. Jeffrey P. Prestemon et al., *Projecting Wildfire Area Burned in the South-Eastern United States, 2011-60*, 25 INT'L J. WILDLAND FIRE 715, 726 (2016).

51. Livia Marqués, *The Fate of Southern Forests: Impacts of Climate Change and Variability*, COMPASS, Feb. 2008, at 3.

52. Mitchell et al., *supra* note 23, at 321.

53. *Fast Facts: Hurricane Costs*, OFFICE FOR COASTAL MGMT., <https://coast.noaa.gov/states/fast-facts/hurricane-costs.html> (last visited Oct. 21, 2018).

54. *Id.*

Hurricanes Katrina and Rita destroyed millions of acres of timber and caused billions of dollars of damage in 2005.⁵⁵ This past hurricane season was particularly devastating for the Southeast. Hurricane Harvey dropped a tremendous amount of water, in record amounts, across Texas.⁵⁶ For every one degree Fahrenheit of temperature rise globally, a hurricane can pick up and drop 4% more water.⁵⁷ This has contributed to an increase in severe flooding events in the Southeast in addition to damage caused by hurricane-force winds.

Sea level rise also poses a great threat to southeastern “third coast” states, largely because of the gradual slope of land coming out of the Gulf of Mexico.⁵⁸ Louisiana has the highest rate of relative sea level rise in the world,⁵⁹ because the land is sinking as the water is rising—subsidence has accelerated because of the levying of the Mississippi River and the prevention of sediment deposition in the coastal delta. Miami and other major U.S. cities are experiencing sunny day flooding, as high tides bring water into places that previously only flooded during heavy rainfall events.⁶⁰

III. CLIMATE CHANGE’S DISPROPORTIONATE ECONOMIC AND HEALTH IMPACTS ON THE SOUTHEAST

A recent study—the first of its kind—highlights how climate change will actually affect the Southeast disproportionately to the rest of the United States, particularly with regard to economic productivity.⁶¹ The study was

55. Kathleen Kreller, *Katrina and Rita’s Timber Toll Ripples Across Industries*, WASH. POST (Oct. 8, 2005), https://www.washingtonpost.com/archive/realstate/2005/10/08/katrina-and-ritas-timber-toll-ripples-across-industries/9fb9397b-74fa-4093-9451-384cf621a65e/?utm_term=.95d144a9d4b7.

56. Jason Samenow, *60 Inches of Rain Fell from Hurricane Harvey in Texas, Shattering U.S. Storm Record*, WASH. POST (Sept. 22, 2017), https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/08/29/harvey-marks-the-most-extreme-rain-event-in-u-s-history/?noredirect=on&utm_term=.ff27d81bd9ce.

57. *Warmer Air Means More Evaporation and Precipitation*, CLIMATE CENT. (Sept. 6, 2017), <http://www.climatecentral.org/gallery/graphics/warmer-air-means-more-evaporation-and-precipitation>.

58. *Climate Change Impacts on Tidal Wetlands*, TEXAS A&M AGRILIFE EXTENSION, <https://coastalresilience.tamu.edu/home/wetland-protection/intro-to-wetland-protection/> (last visited Oct. 21, 2018).

59. Lorraine Chow, *Louisiana Faces Faster Levels of Sea-Level Rise Than Any Other Land On Earth*, ECOWATCH (Jan. 4, 2017, 2:39 PM), <https://www.ecowatch.com/louisiana-sea-level-rise-2178631264.html>.

60. Kevin Loria, *Cities Around the US Are Flooding at High Tide and on Sunny Days at Record Rates—Here’s What It’s Like*, BUS. INSIDER (June 12, 2018), <http://www.businessinsider.com/sea-level-rise-high-tides-sunny-day-flooding-coastal-cities-2018-4>.

61. Solomon Hsiang et. al., *Estimating Economic Damage from Climate Change in the United States*, 356 SCIENCE 1362 (June 30, 2017), <http://science.sciencemag.org/content/356/6345/1362>.

published in the journal *Science*, and determined that the worst-impacted counties—the poorest third, mostly in states that already have warm climates like the Southeast—could see economic losses equal to 10 to 20% of yearly Gross Domestic Product (GDP) or more if emissions continue to rise unchecked.⁶² The economic models used for the study were improvements over past models which had only looked at the United States as a single region. Robert Kopp, a climate scientist at Rutgers University and lead author of the study, noted that past models “missed this entire story of how climate change would create this large transfer of wealth between states.”⁶³ The study:

[was] the first to use state-of-the-art statistical methods and 116 climate projections developed by scientists around the world to price the impacts of climate change the way the insurance industry or an investor would, comparing risks and rewards. The team of economists and climate scientists computed the real-world costs and benefits: how agriculture, crime, health, energy demand, labor and coastal communities will be affected by higher temperatures, changing rainfall, rising seas and intensifying hurricanes.⁶⁴

The study determined that if communities do not take preventative measures, the projected increase in heat-related deaths by the end of this century would be roughly equivalent to the number of Americans killed annually in auto accidents.⁶⁵ Higher temperatures may result in increased energy costs, as grid expansion is needed to account for heavier air-conditioning use in warmer months.⁶⁶ Productivity in labor markets is projected to decline in many regions as well.⁶⁷

Ultimately, the Southeast is already the poorest region of the nation, and this important and unsettling study predicts that climate change will make it even poorer.

IV. WHY IS THE SOUTHEAST SO PRONE TO CLIMATE DENIAL?

Before discussing some of the drivers of climate denial in the Southeast, we should make a few clarifications. There are certainly

62. *Id.*

63. Brad Plumer & Nadja Popovich, *As Climate Changes, Southern States Will Suffer More Than Others*, N.Y. TIMES (June 29, 2017), <https://www.nytimes.com/interactive/2017/06/29/climate/southern-states-worse-climate-effects.html>.

64. *Climate Change Damages U.S. Economy, Increases Inequality*, RUTGERS TODAY (June 29, 2017), <https://news.rutgers.edu/news/study-climate-change-damages-us-economy-increases-inequality/20170628#.WwGhkUgvxPY>.

65. Plumer & Popovich, *supra* note 63.

66. *Id.*

67. *Id.*

governments in the Southeast taking action to mitigate climate warming greenhouse gases or adapting to climate change's effects, but these governments are almost entirely municipal.⁶⁸ Indeed, an urban-rural divide on climate is present in the Southeast, as cities take climate action while rural sentiments sway state and federal representatives to refuse such policies. While this divide is present in virtually all parts of the country, it is particularly acute in the Southeast, as evidenced by the dearth of state-level climate policies of any type. Meanwhile, Atlanta, Georgia's city council has set a goal of 100% renewable energy for city operations by 2025 and for the entire city by 2035.⁶⁹ Both Austin, Texas and Dallas, Texas city governments get 100% of their energy from wind, while Houston, Texas gets 89% of its energy from wind and solar.⁷⁰ Miami, Florida recognizes the precarious position in which climate change places it,⁷¹ and South Miami even requires solar installations on new homes.⁷²

Though some governments in the Southeast are taking action on climate, other decisions taken by governments in the region (sometimes even the same level of government) effectively amount to climate denial. Consider Houston, Texas's continued approval of new developments in undeveloped portions of the 100 year flood plain, even *after* Hurricane Harvey and three consecutive years of severe flood events in those floodplains.⁷³ Or consider the state of Louisiana's Coastal Master Plan,⁷⁴ which—while mentioning climate change briefly as a factor to consider in

68. At least 405 Mayors nationwide support the Paris Agreement (*407 U.S. Climate Mayors Commit to Adopt, Honor, and Uphold Paris Climate Agreement Goals*, MEDIUM (June 1, 2017), <https://medium.com/@ClimateMayors/climate-mayors-commit-to-adopt-honor-and-uphold-paris-climate-agreement-goals-ba566e260097>), while more than 110 have endorsed the goal of making their cities run on 100% renewable energy (Shane Levy, *Over 110 U.S. Mayors Endorse Powering Their Communities Entirely With Clean, Renewable Energy*, SIERRA CLUB (June 23, 2017), <https://www.sierraclub.org/compass/2017/06/over-110-us-mayors-endorse-powering-their-communities-entirely-clean-renewable>).

69. Molly Samuel, *Atlanta Is Working On Climate Change, But There's More to Do*, WABE (Oct. 24, 2017), <https://www.wabe.org/atlanta-working-climate-change-theres/>.

70. *Green Power Partnership Top 30 Local Government*, U.S. ENVTL. PROTECTION AGENCY (July 23, 2018), <https://www.epa.gov/greenpower/green-power-partnership-top-30-local-government>.

71. *Climate Change*, MIAMI-DADE GREEN, <https://www.miamidade.gov/green/climate-change.asp> (last visited Oct. 20, 2018).

72. Bobby Magill, *South Miami Just Made a Huge Rooftop Solar Decision*, CLIMATE CENT. (July 20, 2017), <http://www.climatecentral.org/news/florida-california-solar-mandate-21631>.

73. Blake Hudson, *Houston Must Stop Developing in the 100-year Flood Plain*, HOUS. CHRON. (Nov. 17, 2017, 8:46 AM), <https://www.houstonchronicle.com/opinion/outlook/article/Hudson-Houston-must-stop-developing-in-the-12364026.php>.

74. EXECUTIVE SUMMARY, NEW ORLEANS' PLAN FOR THE 21ST CENTURY, CITY OF NEW ORLEANS CITY PLAN. COMM'N 86 (Aug. 2010), <https://www.nola.gov/getattachment/4dcf72fd-b189-4937-bd69-dba2958a483e/Vol-1-Executive-Summary/>.

coastal restoration—plans to invest billions over the next few decades into primarily structural, human-engineered projects that critics argue will not be able to keep pace with rising sea levels.⁷⁵ Indeed, coastal restoration in Louisiana may be considered a form of climate denial, since these human engineering projects may very well fail and resources would have been better allocated to adaptive retreat.⁷⁶ In other words, even southern governments that acknowledge climate change are in denial about what it actually means for the southern coast over the coming decades and what will be required to move people out of harm's way and adapt to rising sea levels and other climate related disasters.

So if the effects on southeastern states from climate change are so dire, why has discourse on climate gone in the opposite direction in the region? How has the narrative been reframed in such a way as to make this region deny, or at least refuse to take seriously, the disproportionate negative effects that climate change will foist upon it? Ultimately, the causal explanation lies in culture, both the social and institutional (legal)—cultures that have shaped the region over time. History, property regimes, governmental regulatory philosophy, religion, and other cultural aspects of southern life all play a role.

A. History

History, of course, informs the remainder of the discussion below, but is here discussed separately as it provides the broadest context for understanding southern climate change denial. Author Colin Woodard argues that North America can be broken into eleven separate nation-states, where dominant cultures explain our voting behaviors and attitudes toward everything from social issues to the role of government. He states:

The borders of my eleven American nations are reflected in many different types of maps – including maps showing the distribution of linguistic dialects, the spread of cultural artifacts, the prevalence of different religious denominations, and the county-by-county breakdown of voting in virtually every hotly contested presidential race in our history. . . . Our continent's famed mobility has been reinforcing, not

75. Edward P. Richards, *Applying Life Insurance Principles to Coastal Property Insurance to Incentivize Adaptation to Climate Change*, 43 ENVTL. AFF. L. REV. 427, 430 (June 1, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2788065; R. Eugene Turner, *Doubt and the Values of an Ignorance-Based World View for Restoration: Coastal Louisiana Wetlands*, 32 ESTUARIES & COASTS 1054, 1061 (Aug. 25, 2009), <https://link.springer.com/article/10.1007/s12237-009-9214-4>; R. Eugene Turner et al., *Sea-Level Rise Tipping Point of Delta Survival*, 34 J. COASTAL RES. 470, 473 (2018), <http://www.jcronline.org/doi/abs/10.2112/JCOASTRES-D-17-00068.1?code=cerf-site>.

76. Turner et al., *supra* note 75.

dissolving, regional differences, as people increasingly sort themselves into like-minded communities.⁷⁷

Consider the two regions that make up most of the Southeast, Greater Appalachia and the Deep South. First, Greater Appalachia (covering parts of every southeastern state except for Florida and Louisiana):

Founded in the early eighteenth century by wave upon wave of settlers from the war-ravaged borderlands of Northern Ireland, northern England, and the Scottish lowlands . . . [i]t transplanted a culture formed in a state of near constant danger and upheaval, characterized by a warrior ethic and a commitment to personal sovereignty and individual liberty. Intensely suspicious of lowland aristocrats and Yankee social engineers alike, Greater Appalachia has shifted alliances depending on who appeared to be the greatest threat to their freedom. It was with the Union in the Civil War. Since Reconstruction, and especially since the upheavals of the 1960s, it has joined with Deep South to counter federal overrides of local preference.⁷⁸

Second, the Deep South (covering parts of Texas, Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Georgia, North and South Carolina, and Florida):

Established by English slave lords from Barbados, Deep South was meant as a West Indies–style slave society. This nation offered a version of classical Republicanism modeled on the slave states of the ancient world, where democracy was the privilege of the few and enslavement the natural lot of the many. Its caste systems smashed by outside intervention, it continues to fight against expanded federal powers, taxes on capital and the wealthy, and environmental, labor, and consumer regulations.⁷⁹

Though there are other subdivisions in the region, by and large Greater Appalachia and the Deep South drive the culture of the Southeast. Staunch individualism, personal sovereignty, suspicion of outsiders, and resistance to federal control, taxes and government regulation are hallmarks of the ethos of a majority of citizens in the region and, by electoral proxy, the legislators they put into office.

77. Reid Wilson, *Which of the 11 American Nations Do You Live In?*, WASH. POST (Nov. 8, 2013), <https://www.washingtonpost.com/blogs/govbeat/wp/2013/11/08/which-of-the-11-american-nations-do-you-live-in/?noredirect=on>.

78. Colin Woodward, *Up in Arms*, TUFTS MAG., <http://emerald.tufts.edu/alumni/magazine/fall2013/features/up-in-arms.html> (last visited Oct. 21, 2018).

79. *Id.*

B. Private Property

While the Southeast is the most biodiverse region of the United States⁸⁰ and its most productive forested area,⁸¹ most of those resources are contained on private lands. For example, 86% of forests are privately owned in the region.⁸² Resistance to government regulation is a hallmark of private property ownership in the Southeast (as referenced above and discussed below). But perhaps most illustrative of how strongly southerners guard private property rights is the fact that it is even more difficult to *pay* southern landowners to *voluntarily* restrict the use of their property than in other regions of the country.

Consider the case of conservation easements. When the total acreage of private lands under conservation easement agreements⁸³ is compared with total land area in each state, (proportionally) more than three times more private property is placed in conservation easements in northeastern states⁸⁴ than in southeastern states.⁸⁵ Conservation-easement-type policies could be utilized to achieve climate-related goals, such as the protection of carbon-sequestering forests and wetlands. These policies would seem to offer an attractive, voluntary conservation regime in a region where government regulation is resisted at every turn. Strong notions of private property rights in the Southeast, however, complicate the use of even contractual restrictions on the use of private property relative to other parts of the country. Research demonstrates that southern property owners maintain a number of misgivings and misunderstandings about what a conservation

80. Clinton N. Jenkins et al., *US Protected Lands Mismatch Biodiversity Priorities*, 112 PROC. NAT'L ACAD. SCI. 5081, 5085 fig.4 (Mar. 17, 2015), <http://www.pnas.org/content/pnas/112/16/5081.full.pdf>; *Ecosystems in the Southeastern U.S. Are Vulnerable to Climate Change*, USGS, (Aug. 11, 2016), <https://www.usgs.gov/news/ecosystems-southeastern-us-are-vulnerable-climate-change>.

81. Blake Hudson, *Dynamic Forest Federalism*, 71 WASH. & LEE L. REV. 1643, 1699 (Mar. 4, 2014), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2404468 [hereinafter *Dynamic Forest Federalism*].

82. WEAR & GREIS, *supra* note 24, at 103.

83. *Complete U.S. NCED Dataset*, NAT'L CONSERVATION EASEMENT DATABASE (2018), <https://www.conservationaleasement.us/downloads/>. To determine regional usage of conservation easements per land area, the number of all known easements per state from the National Conservation Easement Database (including permanent, temporary, and unknown duration) was compared with the total land area per state as determined by the U.S. Census. [(GIS acres per NCED)/(total land area per U.S. Census)=(% land in conservation easements)].

84. Northeastern states include Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, and Vermont.

85. Southeastern states include Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

easement is and the degree to which it might limit the use of their property.⁸⁶ Indeed, the individualistic culture described by Woodward, focused so acutely on personal sovereignty, is at play regarding southern citizen wariness of not only government policies (such as certain climate policies) that might interfere with their property rights, but also voluntary restrictions on property rights for which they are compensated.⁸⁷

C. Lax Government Regulation

Related to notions of private property rights, and indeed arising in part out of those views, are very lax land use regulations in the Southeast. For example, the region has the least prescriptive private forest policies of virtually any national or subnational government in the world (forest regulation being considered a quintessential land use regulatory sphere).⁸⁸ The United States Forest Service's Southern Forest Futures Report details that due to the lack of forest protections in the Southeast, the region may lose up to 13% of its forests over the next half-century due primarily to urban sprawl and climate change impacts.⁸⁹ This would have an obvious negative impact on the ability of southern forests to effectively sequester carbon dioxide to mitigate climate change impacts. The high proportion of private property in the region plays a key role here, with research demonstrating that the more public forestland a state maintains, the more likely it is that the state legislature will place greater regulatory requirements on the management of privately-owned forest resources within the state.⁹⁰

Southeastern state and local governments also maintain some of the least prescriptive land use regulations in the general land development context.⁹¹ Sprawl is worse in the Southeast than in any other region of the country, chewing up forests, wetlands, and other natural resources at an

86. See *Southern Woodland Owners & Conservation Agreements: What They Think and What to Say: A Guide for Land Trusts and Resource Professionals*, AM. FOREST FOUND. (2010), https://www.treefarmssystem.org/stuff/contentmgr/files/1/e87c10ae501b96584727faebed3bac5f/misc/southern_woodland_owners_and_conservation_agreements.pdf.

87. To be certain, other factors beyond devotion to property rights may be at play here. Southern areas may tend to rely more on economic returns from their property, given the economic systems and opportunities present in the Southeast. Inalienable natural characteristics may play a role as well, as longer growing seasons cause forests to grow faster and for longer periods. This can alter economic incentives to purely preserve. Yet my experience as a southern forest owner has caused me to witness many times over the reticence on the part of landowners to accept any type of restriction whatsoever on their property, regardless of whether governmental or market-based in origin.

88. *Dynamic Forest Federalism*, *supra* note 81.

89. WEAR & GREIS, *supra* note 24.

90. Constance L. McDermott, BENJAMIN CASHORE & PETER KANOWSKI, GLOBAL ENVIRONMENTAL FOREST POLICIES: AN INTERNATIONAL COMPARISON 346 (2010).

91. Blake Hudson, *Curbing Dense Sprawl*, 32 NAT. RESOURCES & ENV'T 18, 18 (2018).

alarming rate.⁹² This has dire implications not only for natural resources, but for citizens vulnerable to the ever-apparent effects of climate change, as evidenced by recent flooding precipitated by Hurricane Harvey. Consider this quote in the context of flooding:

Despite the hazards, states like Texas have taken few steps to reduce risk. Although Texas leads the U.S. in terms of dollars paid for flood claims, it ranks among the worst in flood-control spending. . . . Suburban sprawl has led to new houses and developments being built on flood plains, and complicated emergency response.”⁹³

Texas’s lack of land use planning is representative of that throughout much of the Southeast.

D. Religion

The Southeast tends to be more evangelical than other regions of the country,⁹⁴ contributing to a political conservatism unique from that in other regions.⁹⁵ Despite the likelihood that climate change will make an already poor and vulnerable region of the country far poorer and more vulnerable, an unfortunate irony emerges: the contingent of southern voters that should care the most about the poor and vulnerable—Christian evangelicals—actually doubt the seriousness (or even existence) of climate change the most. This is likely because, as Christian and noted climate scientist Katherine Hayhoe recently argued, “[c]limate science has been very deliberately framed as an alternate religion. . . . Very cleverly, this issue of climate change has been framed as one of false prophets versus true believers.”⁹⁶

Indeed, a full 40% of Americans self-identify as evangelical Christians.⁹⁷ Less than half of evangelicals believe that climate change is real and is caused by humans, according to a study published in *Global*

92. *Id.*

93. Cline, *supra* note 20.

94. Michael Lind, *How the South Skews America*, POLITICO (July 3, 2015), https://www.politico.com/magazine/story/2015/07/how-the-south-skews-america-119725_Page2.html.

95. Paul Harvey, *Race, Culture, and Religion in the American South*, OXFORD RES. ENCYCLOPEDIAS (Mar. 2015), <http://religion.oxfordre.com/view/10.1093/acrefore/9780199340378.001.0001/acrefore-9780199340378-e-7>.

96. Harry Bruinius & Amanda Paulson, *How Climate Change Became a Question of Faith*, CHRISTIAN SCI. MONITOR (Aug. 8, 2017), <https://www.csmonitor.com/Environment/2017/0808/How-climate-change-became-a-question-of-faith>.

97. William Saletan, *Creativity for Creationists*, SLATEN (Dec. 24, 2018, 7:00 AM), http://www.slate.com/articles/health_and_science/human_nature/2014/12/evolutionary_creatonism_jeff_hardin_reconciles_evangelical_christianity.html.

Environmental Change.⁹⁸ A key factor in climate science denial among the religious (and others) has been the concerted effort by right-wing organizations to fund and expand climate science disinformation campaigns, including the American Enterprise Institute, the Heartland Institute, the Cato Institute, and the Heritage Foundation, among others.⁹⁹ Some of the most harmful of such groups to the cause of science are those who claim to be faith-based, like the Cornwall Alliance.¹⁰⁰ The resulting politicization of climate change has had a profound effect on the attitudes of not only national evangelical leaders, but their constituents.

Given that evangelicals strongly associate with the Republican party, perhaps it is unsurprising that many (though certainly not all; see, e.g., Katherine Hayhoe)¹⁰¹ have drifted in their trust of basic science and its applications. Though anecdotal, both of the authors have experienced many interactions with conservative evangelicals, highly educated in science themselves, who may say that they trust science generally but do not trust *this* science (climate science). Some have a general distrust, while others use shoddy theology to justify their position. Perhaps just as common are evangelicals who may accept the science but do not think that regulatory controls and “more government” is the way to address the problem. It seems true, as Hayhoe points out, that “[i]n the U.S., our faith has been hijacked by our politics.”¹⁰²

V. HOW TO MOVE THE SOUTHEAST TOWARD CLIMATE ACTION— ASSOCIATIONAL MESSAGING

So what does all of the above mean for changing the trajectory of citizen views in the Southeast on the issue of climate change? How can we best influence the discourse and change the narrative that southerners are buying into on climate change?

98. See N. Smith & A. Leiserowitz, *American Evangelicals and Global Warming*, 23 GLOBAL ENVTL. CHANGE 1009 (Oct. 2013), <https://www.sciencedirect.com/science/article/pii/S0959378013000599>.

99. *Global Skeptic Organizations (2013)*, UNION OF CONCERNED SCIENTISTS, <https://www.ucsusa.org/global-warming/solutions/fight-misinformation/global-warming-skeptic.html#.WwVIuUgvxPY> (last updated Aug. 16, 2013).

100. *Cornwall Alliance for the Stewardship of Creation*, DESMOG, <https://www.desmogblog.com/cornwall-alliance-stewardship-creation> (last visited Oct. 14, 2018).

101. *Climate Scientist*, KATHARINE HAYHOE, <http://katharinehayhoe.com/wp2016/> (last visited Oct. 12, 2018).

102. Harry Bruinius & Amanda Paulson, *How Climate Change Became a Question of Faith*, CHRISTIAN SCI. MONITOR (Aug. 8, 2017), <https://www.csmonitor.com/Environment/2017/0808/How-climate-change-became-a-question-of-faith>.

Though many researchers—such as Yale University’s Climate Communication Program¹⁰³—have considered these questions in a general way, one potential approach has yet to be raised or articulated in any meaningful detail. While seemingly modest, this method should be more seriously considered by those seeking to influence climate policy perspectives in the Southeast (and other regions of the country). The approach employs general associational messaging through mass media. Scholars have begun to focus more acutely on mechanisms for better communicating scientific issues in an increasingly partisan world, where “partisan divides and polarized public attitudes are rarely amenable to change simply through the presentation of reasoned argument, information, and expert knowledge.”¹⁰⁴ Our suggestions are an outgrowth of the “vouchers” theory of risk communication, put forth by Dan Kahan and others, whereby trusted members of an individual’s cultural group help convince others in the group that information conforms with the group’s pre-existing worldviews.¹⁰⁵ As explained below, what we call associational messaging is not exactly the conveyance of information by a member of the same cultural group (that is, a pure voucher), but rather conveyance of information *about* entities that southern climate skeptics are more likely to identify with and trust in the hope that the conveyance will help assuage their skepticism.

Climate-concerned groups with the resources to do so should undertake concerted, large-scale, persistent efforts to convey messages to southerners that groups they associate with are preparing for climate change and are investing in climate mitigation and adaptation efforts. Entities concerned about climate change—from NGO’s like Sierra Club and the Natural Resources Defense Council, to citizen groups, to the Democratic National Committee—should shift at least some funds away from mere partisan messaging and political campaigning. Simply attempting to outnumber “the other side” is not working (and we believe will not work going forward). Instead, these groups should shift resources, as just one example (the exclusive focus of this Article), toward buying thirty second television spots informing viewers of the specific actions that various entities with which conservative southerners (even Democrats) typically identify are taking on climate change. These spots should highlight the climate action policies of (1) the United States’ military, (2) specific Fortune 500 companies (as

103. YALE PROGRAM ON CLIMATE CHANGE COMMUN., <http://climatecommunication.yale.edu/> (last visited Oct. 12, 2018).

104. Hari M. Osofsky & Jacqueline Peel, *Energy Partisanship*, 65 EMORY L. J. 695, 704 (2016).

105. Dan Kahan, *Fixing the Communications Failure*, 463 NATURE 296, 297 (2010). See also Robert R. M. Verchick, *Culture, Cognition, and Climate*, 2016 U. ILL. L. REV. 969, 982 (2016).

representative of “the private sector” and “free market” that many southerners generally support), (3) the insurance industry (also representative of the “private/free market”), and (4) sports and recreation groups and related industries (not only outdoor sports and recreation groups, such as hunting and fishing, but also college and professional sports teams, which to our knowledge garner relatively bipartisan support). Each of these groups is a known quantity with well-established public relations operations, and provide freely accessible, neatly packaged information that can be used to sway the perception of climate science among southern climate change skeptics.

It is not necessary that the military, corporations, or sports organizations themselves sponsor such ads. In fact, some organizations (like NASCAR, discussed below) may worry about losing supporters/consumers if they were to run climate action ads. Rather, other organizations who seek to change the climate change conversation should package publicly available information regarding the climate action efforts of these groups for mass media dissemination and consumption that will reach the intended audience. These ads could be like the thousands of political ads that post every election cycle across the nation. The ads should run on Fox News, ESPN, the primary networks, among other channels, and should air during episodes of Fox and Friends, the College Football National Championship, the Bachelorette and American Idol, and pretty much any other popular show consumed by many viewers. To the extent that the ad ends with the typical “paid for by” disclaimer, and groups are concerned that viewers might dismiss the message depending on the messenger, then create a group called “Climate Facts.org” who, in turn, is funded by Sierra Club, Environmental Defense Fund, the Democratic National Convention, Al Gore, or whoever. Or perhaps Sierra Club and other organizations could fund a group of climate-concerned Republicans who put the ads together and claim ownership over them. One such group might be that headed by former climate skeptic Bob Inglis, called RepublicEN, which calls itself the “EcoRight” and declares that it “want[s] to solve climate change.”¹⁰⁶ Regardless of approach, the message/messenger conflation problem can be worked around.

In the end, greater effort must be made to convey through associational messaging that the entities that skeptics trust more than the government are actually concerned about climate science and are taking concrete actions based upon that science to address climate change. In the subsections below, we suggest to the Democratic National Committee or Sierra Club, or to any other organizations seeking to shape public policy in the climate space (“liberal” or “conservative”): shift some of your resources money away

106. REPUBLICEN, <http://www.republicen.org/> (last visited Dec. 12, 2018).

from trying to get X politician elected and into information campaigns and thirty second television spots that run year-round to reach southerners and other climate skeptics around the country. Refusing to allow these facts to remain in the shadows and unknown to the general public will be critical to changing climate narratives and policies.

A. The United States Armed Forces

The U.S. Armed Forces is concerned about climate change. In the National Defense Authorization Act for the Fiscal Year of 2018, Congress instructed the military to remain appraised of potential impacts climate change will have on military operations. In the Act, signed by President Trump, Congress stated:

It is the sense of Congress that—climate change is a direct threat to the national security of the United States and is impacting stability in areas of the world both where the United States Armed Forces are operating today, and where strategic implications for future conflict exist . . . the Department of Defense must ensure that it is prepared to conduct operations both today and in the future and that it is prepared to address the effects of a changing climate on threat assessments, resources, and readiness . . . military installations must be able to effectively prepare to mitigate climate damage in their master planning and infrastructure planning and design, so that they might best consider the weather and natural resources most pertinent to them.¹⁰⁷

In fact, in a survey on the effects of climate change on military assets, over half of the military sites surveyed reported that they experienced some climate precipitated impact such as drought, wind, or non-storm surge related flooding.¹⁰⁸ 10% of the surveyed sites reported impacts from extreme temperatures.¹⁰⁹ These data and the Department of Defense's statement that "[c]hanges in climate can potentially shape the environment in which we operate and the missions we are required to do"¹¹⁰ can be used to associate tangible effects of climate change with a trusted source of southern cultural identity. While the military may be considered by some as just another government entity, the perceived independence, autonomy, and commitment to a no-nonsense approach to operating, combined with the patriotic cover

107. H.R. REP. NO.115-404, at 77–78 (2017) (Conf. Rep.), <https://www.congress.gov/congressional-report/115th-congress/house-report/404/1>.

108. OFFICE OF THE UNDER SEC'Y OF DEF. FOR ACQUISITION, TECH., & LOGISTICS, CLIMATE-RELATED RISK TO DOD INFRASTRUCTURE INITIAL VULNERABILITY ASSESSMENT SURVEY (SLVAS) REPORT (Jan. 2018), <https://climateandsecurity.files.wordpress.com/2018/01/tab-b-slvas-report-1-24-2018.pdf> [hereinafter SLVAS REPORT].

109. *Id.*

110. SLVAS REPORT, *supra* note 108.

the military garners where other administrative bodies do not, should facilitate an effective communication medium on climate.

Southerners support the military, at least partly because the Southeast has a far higher representation in the military relative to its overall population than other regions of the United States.¹¹¹ Some have also argued that support for the military is simply part of the cultural fabric of the Southeast, with roots going back to the honor culture brought over by early Scotch-Irish settlers.¹¹² Regardless, running a positive, spin and hyperbole-free television spot providing specifics about the military's acceptance of climate science and its actions to mitigate and adapt to it, could go far in influencing southerners' perceptions of climate change policy. The message just simply is not getting through at present, and most southerners we come into contact with simply do not know that the military is taking climate-action measures, much less doing it under commands from Congress and with the endorsement of the President.

So, our proposed thirty second television spot is as follows: "Did you know that the United States Armed Forces is preparing for climate change in X, Y, and Z ways, considering it the 'primary threat to U.S. national security' [*or some such quote*]?" and/or "President Donald Trump recently signed into law the Defense Authorization Act that designates climate change a serious threat to national security," and/or "Congress recently required the United States Armed Forces to constantly assess effects climate change is expected to have on military operations . . ." While we are confident that non-legal professionals can develop effective means of conveying this basic information, these suggestions provide a start.

B. Fortune 500 Companies

Here we recommend the same television spots as advocated in the prior section, but with a different subject matter. Sponsors should take thirty seconds to highlight the climate perspectives and actions of well-recognized Fortune 500 companies. Fortune 500 companies have a two-pronged influence over constituencies in the Southeast: goodwill and a free-market efficiency. In a region of the country that tends to love private actors and (at least claim) to abhor government actors, private actors can have great

111. Sean Braswell, *Why the US Military is So Southern*, OZY (Nov. 20, 2016), <https://www.ozy.com/acumen/why-the-us-military-is-so-southern/72100>; OFFICE OF THE UNDER SEC'Y OF DEF., PERS. & READINESS, POPULATION REPRESENTATION IN THE MILITARY SERVICES: FISCAL YEAR 2016 SUMMARY REPORT 21–22 (2016), <https://www.cna.org/pop-rep/2016/summary/summary.pdf>.

112. Nigel Barber, *Is Southern Violence Due to a Culture of Honor?*, PSYCHOL. TODAY (Apr. 2, 2009), <https://www.psychologytoday.com/us/blog/the-human-beast/200904/is-southern-violence-due-culture-honor>.

influence. These companies are often known for services or products that penetrate a consumer's everyday life and therefore can provide a recognizable medium and an instant air of credibility and trustworthiness. Cultivating trust in a company selling laundry detergent or staple food products is something those companies spend time and money on, and that trust can translate into normalizing the notion of taking climate change seriously. If, however, one does not accept that simple goodwill can affect such deeply held beliefs, successful companies also represent the ruthless efficiency of the market. If it is part of the profit-maximizing goal of a large corporation to consider effects of climate change, and even to take climate-motivated actions, a consumer is less likely to view climate change as a hoax or simply a liberal ploy or political construct.¹¹³

Specific, well-known companies' publicly available stances on climate change should be highlighted in mass media to take advantage of name recognition and consumer trust. General Motors, Kroger, Coca-Cola, FedEx, and Walmart are just a few examples of household names that can engender consumer trust in climate science or at least invoke the reasonableness that comes with capitalism's profit motives. GM's climate declaration articulates that "General Motors continues to prove that there is economic opportunity in tackling climate change."¹¹⁴ Kroger maintains an entire section on its sustainability page devoted to "carbon reduction" goals.¹¹⁵ Coca-Cola touts "climate protection" and reduction of greenhouse gases on its website.¹¹⁶ FedEx declares its intent to be carbon neutral and has been labeled a climate innovator,¹¹⁷ while Walmart makes clear its commitment to reducing greenhouse gas emissions on its corporate webpage.¹¹⁸ Are everyday consumers of these products aware of these stances? Highly unlikely. But they should be.

113. The Environmental Protection Agency (EPA) releases a list of green Fortune 500 companies, and the Dow Jones Sustainability Index ranks global companies based on their metrics across a range of sustainability factors. *Green Power Partnership Fortune 500® Partners List*, U.S. ENVTL. PROT. AGENCY (Oct. 29, 2018), <https://www.epa.gov/greenpower/green-power-partnership-fortune-500r-partners-list>.

114. *GM's "Climate Declaration" Speaks Louder than Words*, GEN. MOTORS (Apr. 10, 2014), <https://media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2014/Apr/0410-ceres.html>.

115. *2020 Sustainability Goals*, KROGER, <http://sustainability.kroger.com/2020-goals.html> (last visited Oct. 18, 2018).

116. *2016 Sustainability Highlights*, COCA-COLA (Aug. 18, 2017), <https://www.coca-colacompany.com/stories/2016-sustainability-highlights-infographic>

117. *FedEx and the Environment*, FEDEX, <http://www.fedex.com/bj/about/sustainability/environment.html> (last visited October 18, 2018).

118. *Sustainability in Our Operations*, WALMART, <https://corporate.walmart.com/global-responsibility/sustainability/sustainability-in-our-operations> (last visited Oct. 18, 2018).

Also, consider “big agriculture.” Monsanto has a web page devoted to “Tackling Climate Change” which states: “Climate change is one of the most pressing challenges facing humanity. Farmers in particular may be impacted by its effects, which include drought, extreme heat, severe weather events, shifting climatic trends, flooding, and compromised harvests.”¹¹⁹ And there are yet other industries to highlight: Dow Chemical’s “Addressing Climate Change” page states: “Dow believes that providing humanity with a sustainable energy supply while addressing climate change is the most urgent environmental issue our society faces. Dow, being a world leader in chemistry, is positioned to provide innovations that lead to energy alternatives and less carbon use.”¹²⁰ Research should also determine just how many companies have climate-related policies, so as to convey to the general public the sheer number of companies that are taking climate change seriously.

Highlighting statements in the energy sector is also crucial. Detailing that Chevron¹²¹ and ExxonMobil,¹²² among others, accept climate science and have committed to action will help to reiterate that climate science is objective and reliable. Whether these companies actually do what they claim, or whether one believes they have good intent and commitment on these fronts is beside the point. What matters is that a large segment of climate skeptics associate with these entities and can be swayed—at least on the basic notion that climate change is a largely manmade problem—by the communication of these facts to the public.

So, our proposed thirty second television spot is as follows: “Did you know that [*insert fossil fuel or other widely known corporation here*] has informed shareholders that climate change is expected to . . . ?” or “Did you know that X company has issued a report detailing Y climate change impacts, and has adjusted its business operations in one, two, and three ways to address climate change?”

119. *Tackling Climate Change*, MONSANTO, <https://monsanto.com/company/sustainability/climate-change/> (last visited Oct. 18, 2018).

120. *Our 2015 Sustainability Goals*, DOW, <https://www.dow.com/en-us/science-and-sustainability/2025-sustainability-goals/addressing-climate-change> (last visited Oct. 18, 2018).

121. *Chevron Climate Change*, CHEVRON, <https://www.chevron.com/corporate-responsibility/climate-change> (last visited Oct. 29, 2018).

122. *Engaging on Climate Change Policy*, EXXONMOBILE, <http://corporate.exxonmobil.com/en/community/corporate-citizenship-report/managing-climate-change-risks/engaging-on-climate-policy> (last visited Oct. 10, 2018).

C. Insurance Companies

Insurance companies function as the canary in the coal mine when it comes to what the “free market” says about the reality of climate change. Getting information about insurers to the general public in an accessible, not overly academic manner, can stand to influence individual behavior the same way information about other private companies can. Fortunately, insurance executives realize the power of their position in the context of climate change, saying in a recent report that the insurance industry is “a critical part of the solution. It is neither the polluter nor the climate policy setter, but it plays a critical role in building socio-economic resilience and enabling economic development . . . for achieving climate change goals and targets.”¹²³ If insurance companies consider climate change in their actuarial data, and that consideration is made public or accessible to the public via mass media, individuals may view climate change as more likely to be based in reliable science.

Potential sponsors could take a cue from the Hartford Financial Services Group, which issued a statement in 2014 that Hartford “recognizes the clear consensus in the scientific community that climate change is of real and increasing concern. As an insurer, investor, employer, property owner and responsible corporate citizen, The Hartford is committed to understanding, managing and mitigating the risks associated with climate change.”¹²⁴ While we were happy to find this statement online, it would be better situated in a mass media television ad informing viewers of its existence.

So, our proposed television spot is as follows: “Did you know that private insurance companies are preparing for climate change? Consider the following statement by X company, that . . .” and/or “Did you know that private insurers take signals from science and the free market? These signals tell us that climate change is a problem that all of us should be concerned

123. Maryam Golnaraghi, *Climate Change and the Insurance Industry: Taking Action as Risk Managers and Investors*, GENEVA ASSOC. 8 (Jan. 2018), https://www.genevaassociation.org/sites/default/files/research-topics-document-type/pdf_public/climate_change_and_the_insurance_industry_-_taking_action_as_risk_managers_and_investors.pdf.

124. Of course the insurance industry can also influence behavior by the prices and policies it sets: “If it’s expensive to insure a house on the coast, individuals will have an incentive to live elsewhere. If insurers offer a discount for climate-proofing homes, homeowners will likewise have an incentive to make that investment.” Matthew E. Kahn, Brian Casey & Nolan Jones, *How the Insurance Industry Can Push Us to Prepare for Climate Change*, HARV. BUS. REV. (Aug. 28, 2017), <https://hbr.org/2017/08/how-the-insurance-industry-can-push-us-to-prepare-for-climate-change>. These shifts in behavior in response to price signals would eventually aggregate to cause large-scale changes and, even if not encompassed by belief in climate science, would serve to meet the same ends of mitigating climate change effects.

about” and/or “Did you know that insurance companies, based upon free market signals and climate science, are starting to adjust your insurance coverages in X, Y, and Z ways because they project climate change to . . . ?”

D. Sports and Recreation Groups

The sports and recreation group category encompasses conservation and outdoor sportsman groups (hunting, fishing, etc.) as well as groups that logically correlate, such as major sports franchises or tangential equipment manufacturers or lifestyle brands. Well-respected outdoor conservation groups, such as Ducks Unlimited and the National Wildlife Federation are known for advocating for sportsmen and species and their habitat, but are also promoting climate action. Ducks Unlimited’s climate change page begins with this statement:

Most scientists predict that climate change will affect almost every aspect of our environment, including North America’s wetlands and waterfowl. Projections for the next 100 years indicate an acceleration of ongoing impacts, including extensive warming in many areas, shifting patterns of precipitation, sea level rise, changes in the timing and length of the seasons, declining mountain snow packs, and increasing frequency and intensity of severe weather events.¹²⁵

Similarly, the National Wildlife Federation’s climate change page states:

Hunters and anglers are on the front lines of climate change, as many sportsmen and women are already seeing the effects of climate change on their hunting and fishing opportunities, and are very concerned about what climate change means to the future of our sports. How we address the challenges of global climate change now will dictate the sporting opportunities for future generations. Climate change poses an immediate and specific threat to hunting and fishing in America, challenging the traditions and values of sportsmen, their respect for the land, and the legacy they leave to future generations.¹²⁶

Conveying to groups of hunters and fishers that organizations who support hunters and fishers are taking climate change seriously can go a long way toward, at least, reducing skepticism of the basic science (if not forge more robust concern). *Field and Stream* magazine, whose website highlights “Hunting, Fishing, Survival, Guns, Gear,” has a series of articles

125. *Climate Change and Water Fowl*, DUCKS UNLIMITED, <http://www.ducks.org/conservation/public-policy/climate-change-and-waterfowl> (last visited Oct 15, 2018).

126. *Fighting Climate Change*, NAT’L WILDLIFE FED’N, <https://www.nwf.org/Sportsmen/Climate-Change> (last visited Oct. 10, 2018).

tagged on the topic of “climate change,” ranging from discussions of why reindeer and moose populations are shrinking, to how anglers are handling climate change and fish are becoming smaller due to global warming, to Audubon’s report on climate change impacts on game bird species.¹²⁷

In a similar vein, rural outdoor youth organizations are planting the seed of climate action at a young age. 4-H curriculum includes middle-school-level environmental stewardship, land use, and water management concepts specifically related to climate-relevant science. The 4-H webpage includes a section on “Responding to Global Climate Change,” which takes a reader to resources discussing the human role in the rapid rate of climate change we see today.¹²⁸ The authors know many a southerner that would be influenced (at least over a substantial enough time) by persistent exposure to these facts through mass media.

Professional sports leagues and their teams provide yet another avenue to convey associational messaging on climate. NASCAR, for example, has multiple racing teams and tracks taking actions to mitigate climate impacts, from planting trees near tracks and installing high efficiency lighting and installation of solar power, to taking extra caution in recycling spent oils and other waste materials.¹²⁹ Regarding NASCAR’s “Race to Green” program, NASCAR President Brent Dewar has stated that the program aims to “champion sustainable practices for the benefit of our country, *climate*, and fans.”¹³⁰ If a fan cares about NASCAR, then he or she might also care about climate change—if she knows NASCAR cares about climate change.

The “Green Sports Alliance” is a group of 193 sports teams, including numerous teams from Major League Baseball, the National Football League, and the National Hockey League, as well as college athletics programs (among teams from numerous other leagues).¹³¹ A central focus of the Alliance is climate change.¹³² Other researchers have noted in particular the NFL’s motives for combating climate change, highlighting early “pioneers” on climate policies, including the New York Giants, New York Jets, Seattle

127. *Climate Change*, FIELD & STREAM, <https://www.fieldandstream.com/tags/climate-change> (last visited Oct. 15, 2018) (emphasis added).

128. *Exploring Your Environment: Responding to Global Climate Change*, 4-H, <https://4-h.org/parents/curriculum/exploring-your-environment/> (last visited Oct. 10, 2018).

129. Chelsea Saunders, *NASCAR Green—An Industry Effort*, NASCAR, <https://green.nascar.com/news-media/nascar-green-an-industry-effort-2-copy/> (last visited Oct. 18, 2018).

130. Chelsea Saunders, *NASCAR Race To Green Recognizes Industry—Wide Commitment to Sustainable Practices*, NASCAR (Apr. 18, 2016), <https://green.nascar.com/news-media/nascar-race-to-green-recognizes-industry-wide-commitment-to-sustainable-practices/> (emphasis added).

131. *Member Benefits*, GREEN SPORTS ALLIANCE, <http://greensportsalliance.org/members-benefits/> (last visited Oct. 10, 2018).

132. Marsha W. Johnston, *Green Sports Alliance Update 2018*, BIOCYCLE (June 2018) <https://www.biocycle.net/2018/06/07/green-sports-alliance-update-2018/>.

Seahawks, Philadelphia Eagles, and New England Patriots.¹³³ To the extent that these internal business policies already exist, become more widespread, or become more explicit in their linkage to climate change, sports fans should be made aware.

So, our proposed thirty second television spot is as follows: “Did you know that *Field and Stream* magazine has analyzed climate change impacts on hunting and fishing, and has argued that . . . ?” and/or “did you know about the National Wildlife Federation’s concerns over climate change impacts on hunting/fishing . . . ?” and/or “Did you know that X sports team/league has prepared for climate change in Y ways?”

VI. CONCLUSION

In a world dominated by outrageous headlines and political spin in news stories across the spectrum of political ideology, the climate actions of the military, the “free market” (corporations and insurance companies), and sports and recreation groups fly completely under the radar. All that climate skeptics (often conservative Republicans) are exposed to regarding climate change are either Democrats talking about it, or Republicans and biased news sources criticizing Democrats for talking about it. Important climate action information also flies under the radar of others, like southern Democrats who do not self-identify with conservatism, but who nonetheless distrust the basic science of climate change far more than Democrats in other regions of the country. It is imperative to find associations that southerners (whether conservative Republicans or Democrats more conservative than their peers) identify with and provide southerners that information in an accessible, mass media medium.

So much money is spent on political campaigns and trying to “beat” the other side. This, however, is being done without understanding who the “other side” is (as evidenced by the surprising climate views of many southern Democrats). We must find better ways to change the narrative around climate policy. One of those mechanisms is to adopt associational messaging regarding the climate actions of various entities with which many climate skeptics identify. Only by trusting organizations and groups that they are already inclined to trust might these citizens begin to believe that climate change is a man-made problem of global proportions and is a problem about which we all should be concerned.

133. Bud Ward, *Some Sports Teams Increasingly Going Green*, YALE CLIMATE CONNECTIONS (Dec. 15, 2014) <https://www.yaleclimateconnections.org/2014/12/some-pro-sports-teams-increasingly-going-green/>.