



ENVIRONMENTAL RESILIENCE INSTITUTE

THE HOOSIER LIFE SURVEY

ASSESSING HOOSIER PREPAREDNESS FOR
ENVIRONMENTAL CHANGE, EXTREME
WEATHER, AND OTHER RISKS



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THE HOOSIER LIFE SURVEY:

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Extreme Weather, and
Other Risks

Did you know?

Seventy-five percent of Hoosiers (3 out of 4) think that climate change is happening.

Of this group, **79 percent believe that climate change is caused at least in part by human activities**; just under half the people in this second group attribute it “entirely or mostly” to human activity.

More than half (58 percent) of Hoosiers believe that environmental change is adversely affecting Americans right now; more than two-thirds (72 percent) believe that they, themselves, will feel its impact in some way.

Roughly **one-third of Hoosiers report experiencing recent increases in each of these adverse signs of environmental change: heavy rains, hot days, and mosquitoes.** Only a small minority have perceived a decrease in these or other climate-related problems.

Relatively **few (28 percent) Indiana residents believe that science and technology alone can solve the problems created by environmental change.**

A majority of Hoosier households have already taken simple steps (e.g. shade trees, improved insulation, programmable thermostats, etc.) to improve their household's resilience in the face of extreme weather events; a substantial minority would like to do more.

Yet, **almost half of all Hoosiers (47 percent) feel poorly informed about what policies or programs can address these problems.**

The number of Hoosiers expressing **support for public funding of such improvements rises if the proposed cost is borne by wealthier residents or by those industries with the greatest direct responsibility for greenhouse gas emissions.**

Hoosiers' views, beliefs, actions and support were shaped by demographic characteristics, including their age, community type, political ideology and household income, among other factors. See the spotlight sub-sections, below, for some highlights of these differences; greater detail will be featured in upcoming reports.

¹ Houser and Sandweiss contributed as equal, first authors. The remaining authors are listed alphabetically.

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Preparing for Environmental Change in Indiana: The Hoosier Life Survey

Environmental changes such as extreme weather events, rising temperatures, floods, or droughts affect people across the globe. But whatever their source and however great their extent, these conditions also touch us at local levels that we experience each day—around the house, across our community, on the farm, and throughout the state where we live. The global challenge of environmental change is an Indiana challenge, too.

What is the Hoosier Life Survey?

The Hoosier Life Survey (HLS) is the nation's most comprehensive statewide public-opinion survey of environmental change to date. The HLS addresses how environmental changes—particularly extreme weather events—are perceived, how they affect people in their homes and towns, what Hoosiers are doing about it, and what they expect for the future. This research, sponsored by Indiana University's Environmental Resilience Institute (ERI), was funded by IU's Prepared for Environmental Change Grand Challenge initiative.

Between August and December 2019, ERI reached out to 10,000 adult (18+) Hoosiers across Indiana—from Chicago's suburbs to Cincinnati's metropolitan fringe, from the Grand Chain of the Wabash to the shore of northern Indiana's historic Limberlost Swamp. In total, 2,739 Hoosiers—representing 90 of the state's 92 counties—responded. Thanks to their participation, **ERI can now offer scientists, public officials, and the general public new insight into how climate change affects Hoosiers in their everyday lives.**² (See Appendix 1: Methods for a more detailed description of the survey methods. After dropping respondents from our sample who did not fill out all of the questions examined in this report, our findings below draw on the responses of 1,500 Hoosiers from across the state.)

2 Composite margin of error for our sample at the state level is +/- 3.7 at a 95 percent confidence level, account for the survey design effects.

3 ERI defines "resilience," in brief, as "the ability to withstand or bounce back from adversity." For more discussion of this term, see, "What is Resilience?" on the ERI website, <https://eri.iu.edu/tools-and-resources/fact-sheets/state-of-resilience-preparing-indiana-for-environmental-change.html>

What does the HLS tell us?

We asked our Indiana neighbors more than 100 questions, organized in sections titled *Who You Are*, *Where You Live*, *What You Value*, *What You've Heard*, *You and the Environment*, and *What You Do*. Taken together, our respondents' answers show us **what Hoosiers think about environmental change**—its origins, its extent, its impact on their families. The survey tells us, too, **how Hoosiers learn about the issues** vital to their future—whom they trust, to whom they listen, from whom they'd like to hear more. It highlights **how much Indiana residents are already doing**—or are prepared to do—**to build resilience**³ in the face of one of the grand challenges of our time. And it reveals the role of **political and personal values**—along with social, demographic, and economic differences—in **dividing Indiana's citizens** in their approach to that challenge—as well as the **fundamental things that we share** despite such differences.

HLS's in-depth, localized data enrich and focus the findings of other studies such as the Yale Climate Opinion Maps or the Pew Research Center's US Public Views on Climate and Energy report. While these national surveys provide useful guidance to Americans seeking to understand and prepare for environmental change, the HLS—combined with the ERI's Hoosier Resilience Index, ERI Toolkit, and the Indiana Climate Change Impacts Assessment, coordinated by the Purdue Climate Change Research Center—provides a model for universities and states wishing to tailor their understanding of environmental change and resilience strategies to the particular geographies and political and social settings in which practical, local actions can be taken.

What have we learned so far? Highlights of the HLS

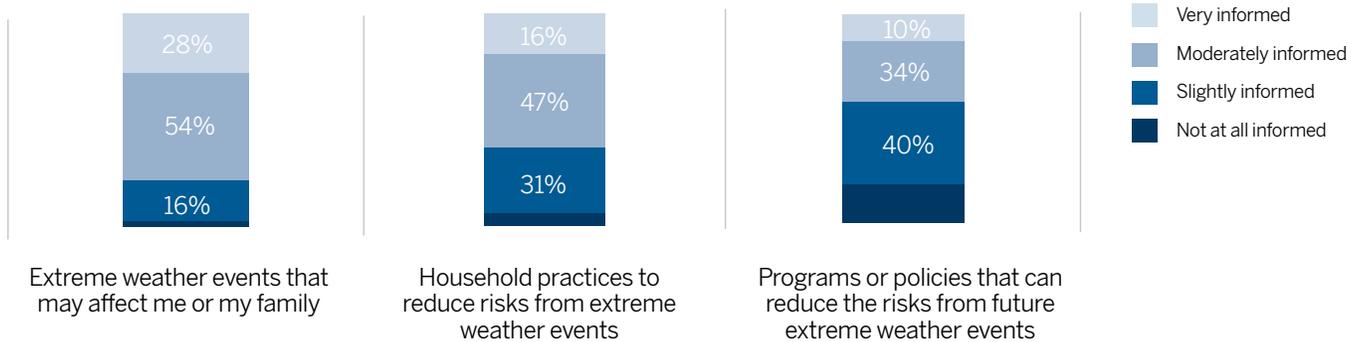
In the sections that follow, we highlight some statewide findings about Hoosier responses to environmental change and extreme weather events. Look for more detailed analysis of these and other results in the months to come.

WHAT YOU'VE HEARD

How informed do Hoosiers feel? We asked Hoosiers how well-informed they feel about the risks from extreme weather, a key impact of climate change, and the strategies or solutions needed to face them. While most respondents have some idea of what changes in household practice or public policy might improve resilience, they told us that they feel better-informed about the facts of climate-related problems than they do about how to respond to those challenges (Figure 1).

FIGURE 1: FEW HOOSIERS FEEL WELL-INFORMED ABOUT HOW TO PREPARE FOR CLIMATE-RELATED EXTREME WEATHER EVENTS

Question: How well-informed do you feel about the following?

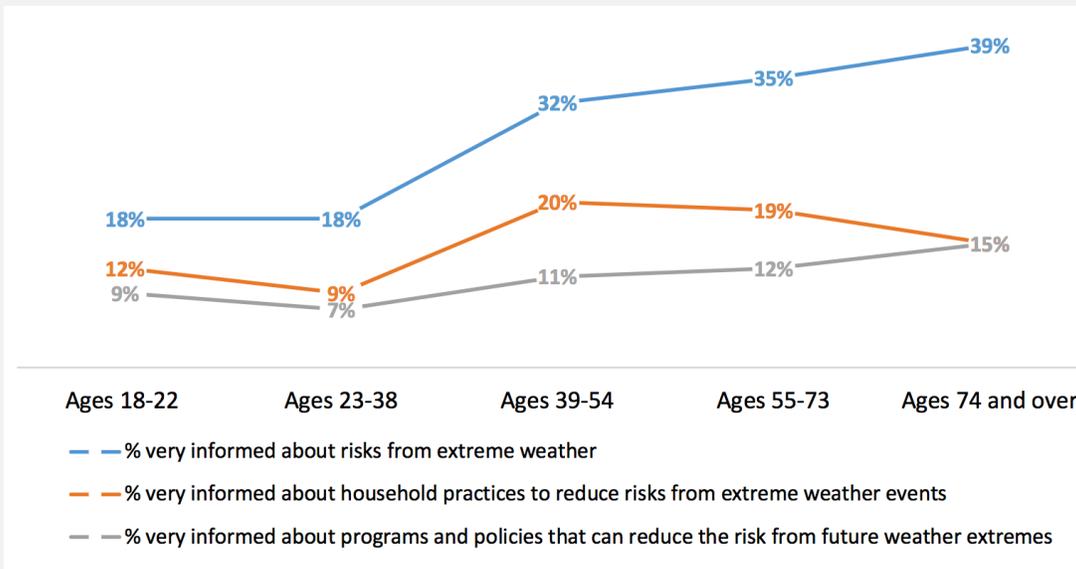


SPOTLIGHT: The role of age in shaping how informed Hoosiers feel about extreme weather

While most Hoosiers do not feel “very informed” about the risks associated with weather extremes and even fewer feel “very informed” about how to prepare for these events, there are some clear differences in who feels this way among Indiana residents. Older Hoosiers are more likely than younger Hoosiers to feel very informed about these risks and the policies to deal with them (Figure 2).

Moving forward, it will be important to determine if older Hoosiers are actually accurately informed about the risks from extreme weather events, as many extremes to come (such as greater frequency and intensity of heat waves) pose a more significant risk to older individuals. Given that fewer older Hoosiers feel very informed about how to deal with extreme events, more outreach and resources may be needed to help this already vulnerable population prepare.

FIGURE 2: OLDER HOOSIERS MORE LIKELY TO FEEL “VERY INFORMED” ABOUT EXTREME WEATHER RISKS AND POLICIES TO PREPARE FOR THEM

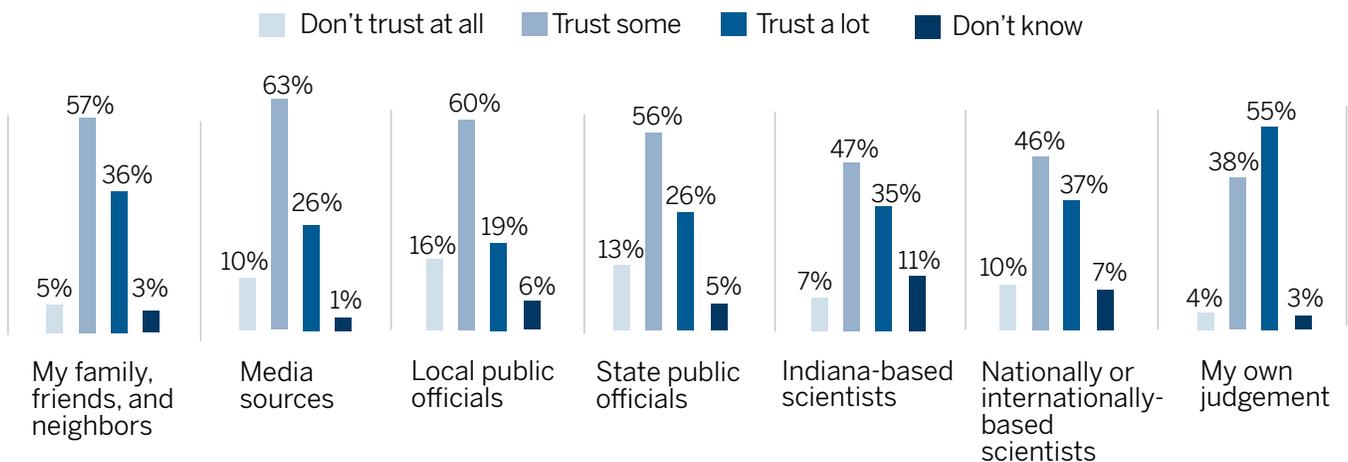


WHAT YOU'VE HEARD

Whom do Hoosiers trust? We asked Hoosiers whom they trusted to provide reliable information on how to prepare for the impact of extreme weather events. They registered their highest level of distrust toward local officials; their highest level of trust, by far, lay in their own judgment. Scientific communities comprised their next most trusted source of information on how to prepare for future climate impacts, followed by family, friends and neighbors, and the media (see Figure 3).

FIGURE 3: HOOSIERS MOST TRUST THEIR OWN JUDGMENT, AND THEN SCIENTISTS, WHEN IT COMES TO GETTING INFORMATION ABOUT PREPARING FOR EXTREME WEATHER

Question: How much do you trust each of the following sources to provide you with information about how to prepare for extreme weather?



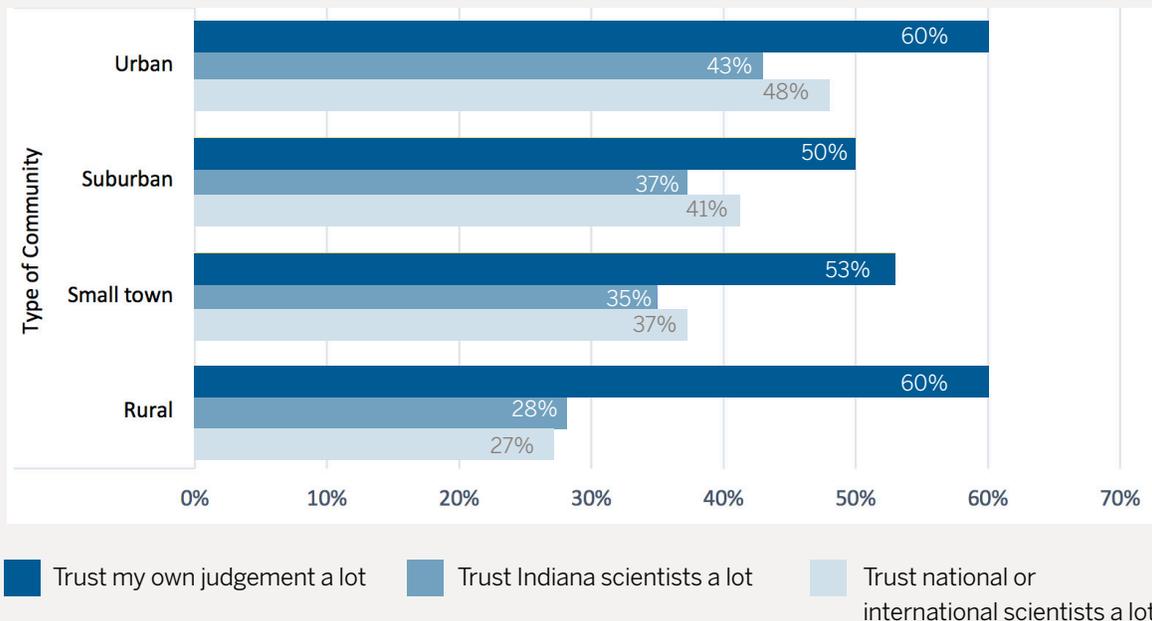
SPOTLIGHT: Community type of trust in information sources

Whom Hoosiers trust for information about how to prepare for the impacts of climate change, such as extreme weather events, will shape how or even if they prepare.

Individuals we surveyed who identified their community as “urban” were much more likely to trust scientists “a lot” for information about how to prepare for the impacts of extreme weather than those in rural areas. “Rural” and “urban” Hoosiers were both more likely than suburban and small-town Hoosiers to trust their “own judgement” a lot. These results suggest that expert-driven outreach may be an effective way to connect urban residents with resilience planning information but be less influential in rural communities. Efforts that allow rural residents to make up their own minds, such as connecting with local stakeholders or holding community meetings or dialogues, may be a more effective form of outreach with residents of rural communities.

FIGURE 4: TRUST IN INFORMATION SOURCE DIFFERS BY TYPE OF COMMUNITY

% trusting each source “a lot” to provide them with information about preparing for future weather extremes



Beliefs about climate change: Most Hoosiers believe that climate change is happening—both from their own experience and from what they understand as the scientific consensus. They are less unified in their assessment of the *source* of this change—whether it comes from natural, human, or some combination of natural and human causes. Excluding those who do not believe the climate is changing, roughly eight out of ten Hoosiers believe that climate change is at least to some extent related to human activity. Yet, as figure 6 shows, not all of those who see human activity as playing a role in climate change believe our actions are the primary cause.

FIGURE 5: MOST HOOSIERS THINK CLIMATE CHANGE IS HAPPENING
% expressing their beliefs about if climate change is happening

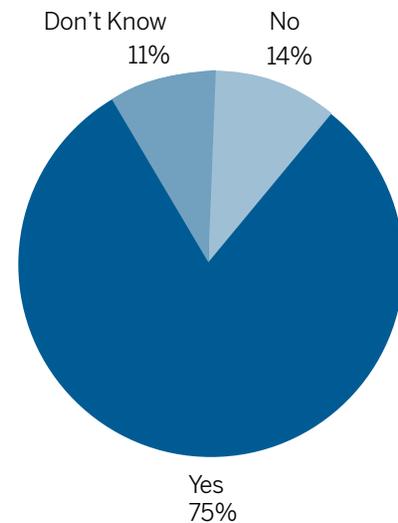


FIGURE 6: EXCLUDING THOSE WHO DO NOT BELIEVE THE CLIMATE IS CHANGING, NEARLY 80% OF HOOSIERS WHO BELIEVE THAT HUMANS PLAY A CAUSAL ROLE TO AT LEAST SOME DEGREE
% expressing what they believe is causing climate change; results exclude those who do not believe climate is changing, (N=1295)

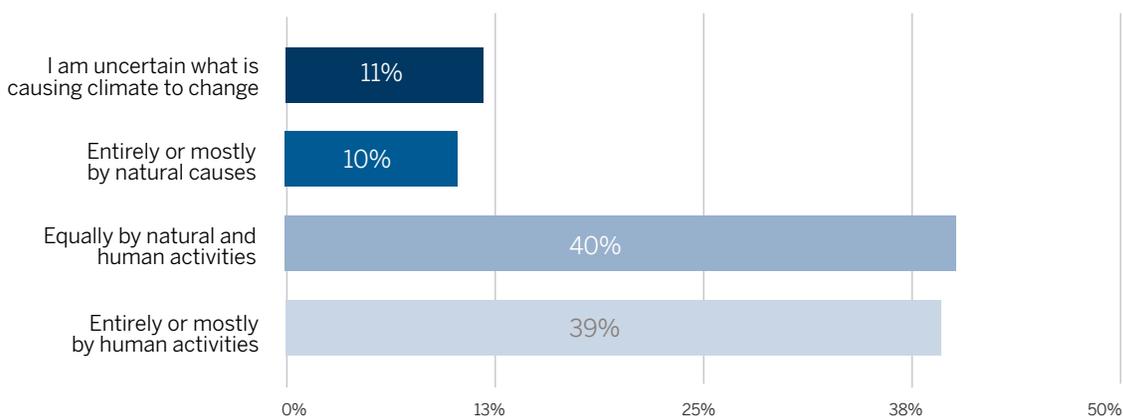
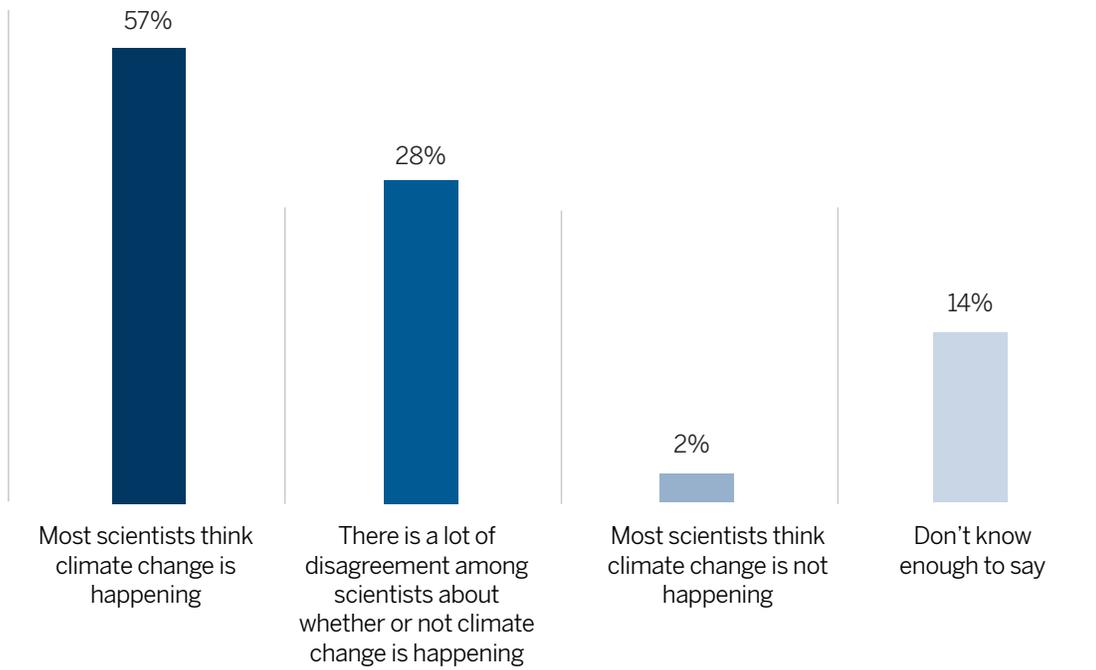


FIGURE 7: SCIENTIFIC CONSENSUS NOT RECOGNIZED BY 1/3 OF HOOSIERS
% responding to: which comes closest to your own view about scientific understandings of climate change?



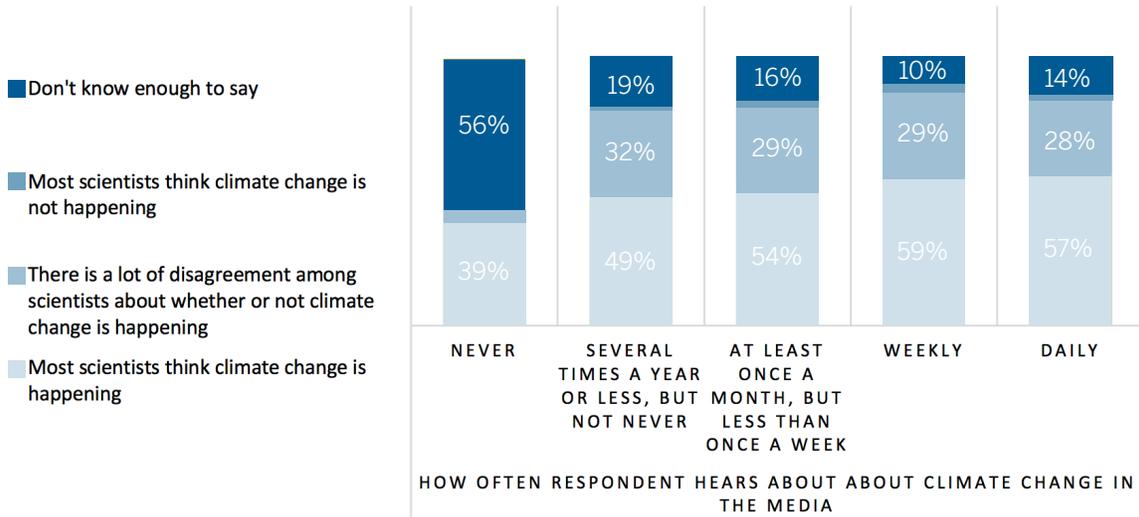
SPOTLIGHT: Climate change in the media and Hoosiers’ awareness of scientific consensus

Over 97 percent of climate scientists agree climate change is happening and caused by humans (Cook et al. 2016). Yet, nearly one-third of Hoosiers perceive much disagreement among scientists (Figure 7). Hearing about climate change more frequently appears to be associated with being more likely to correctly recognize scientific consensus (Figure 8).

This finding may suggest that greater communication and outreach efforts could encourage more widespread recognition of the reality of the climate crisis.

FIGURE 8: GREATER MEDIA CONSUMPTION ASSOCIATED WITH GREATER RECOGNITION OF SCIENTIFIC CONSENSUS

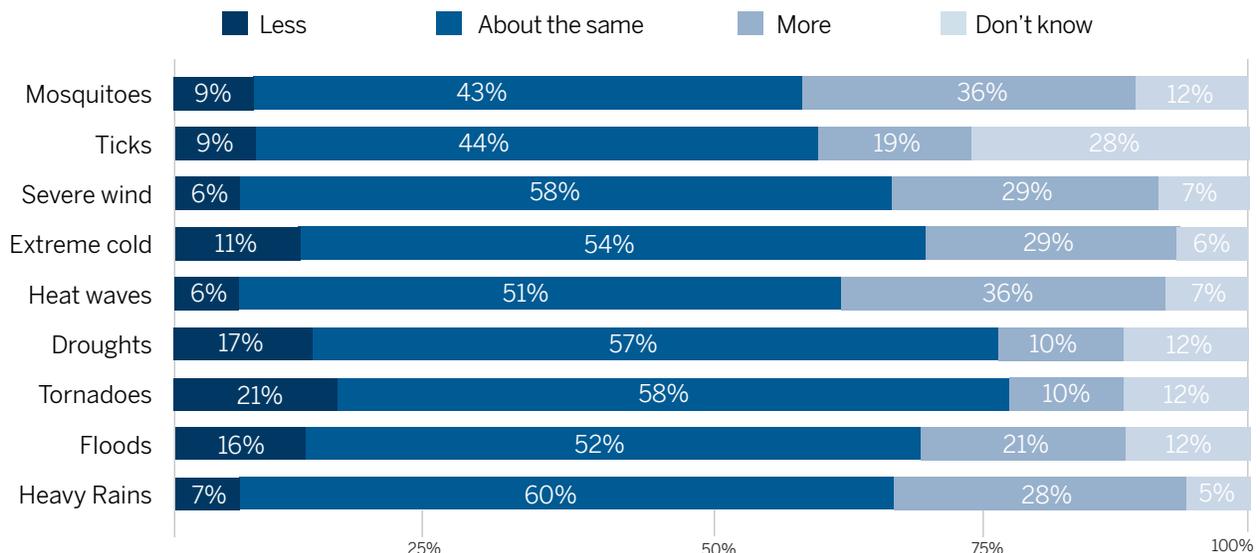
Perception of scientific consensus by frequency of climate change media consumption



What impacts are Hoosiers experiencing? We wanted to know whether and how Hoosiers have directly experienced a range of symptoms of extreme weather or environmental change. We found that, while nearly 80 percent of Hoosiers believe climate change is occurring, relatively few feel that they have witnessed such changes within their own communities (Figure 9)—a contrast that suggests that perceived personal experience is not the dominant driver of belief in the occurrence of climate change. Overall, most of our respondents think that such conditions have remained about the same in their own area; a small percentage of respondents believe that they have even decreased. We also note that Hoosiers have observed the rise of a few particular symptoms of environmental change more than others: around 30 percent of our survey-takers identified heat waves, heavy rains, or mosquitoes as having increased in their own communities. Interestingly, almost 30 percent of Hoosiers also reported an increase in extreme cold temperatures, which is contradicted by evidence showing that the occurrence of cold events has declined since 1915 (Widhalm et al. 2018).

FIGURE 9: THE ENVIRONMENTAL CHANGES THAT HOOSIERS SEE VARY CONSIDERABLY BY TYPE OF CHANGE

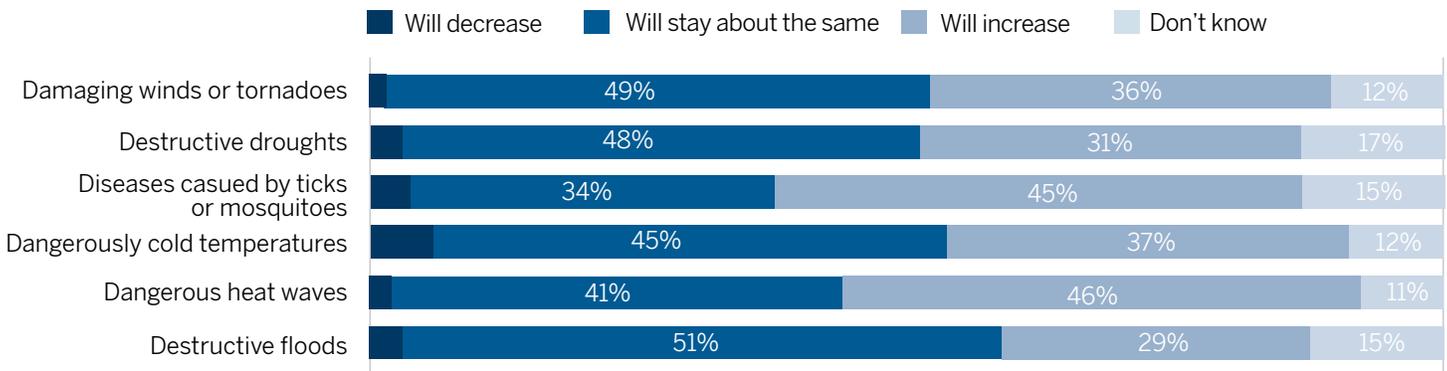
% reporting how the occurrence of each event or insect prevalence has changed over time in their community



What impacts are Hoosiers anticipating? We asked our respondents if they think that their communities will be affected by severe climate stresses in the coming decades. Very few Hoosiers felt that climate change-related impacts will decrease in the future. The two adverse conditions that respondents identified as more likely to increase than simply to stay about the same are the incidence of heat waves and the presence of mosquitoes and ticks (Figure 10).

FIGURE 10: MANY HOOSIERS ANTICIPATE IMPACTS OF CLIMATE CHANGE WILL GROW IN THE FUTURE

% reporting their expectations for how the occurrence of each event or insect prevalence will change in the future in their community



SPOTLIGHT: Climate change beliefs and expectations for future changes

What Hoosiers expect to come in the future may shape how they choose to prepare today. While many in Indiana anticipate that the accelerating impacts of climate change will touch their community, individuals' beliefs about climate change shape the extent to which they anticipate these impacts.

In Figure 11, we show that Hoosiers who do not believe climate change is occurring now, or those who do not feel it is caused by human activity to any extent, are much less likely to anticipate future climate change-related impacts. Interestingly, Hoosiers' expectations for greater prevalence of tick and mosquito-related disease were not as tied to climate change beliefs as expectations for other changes.

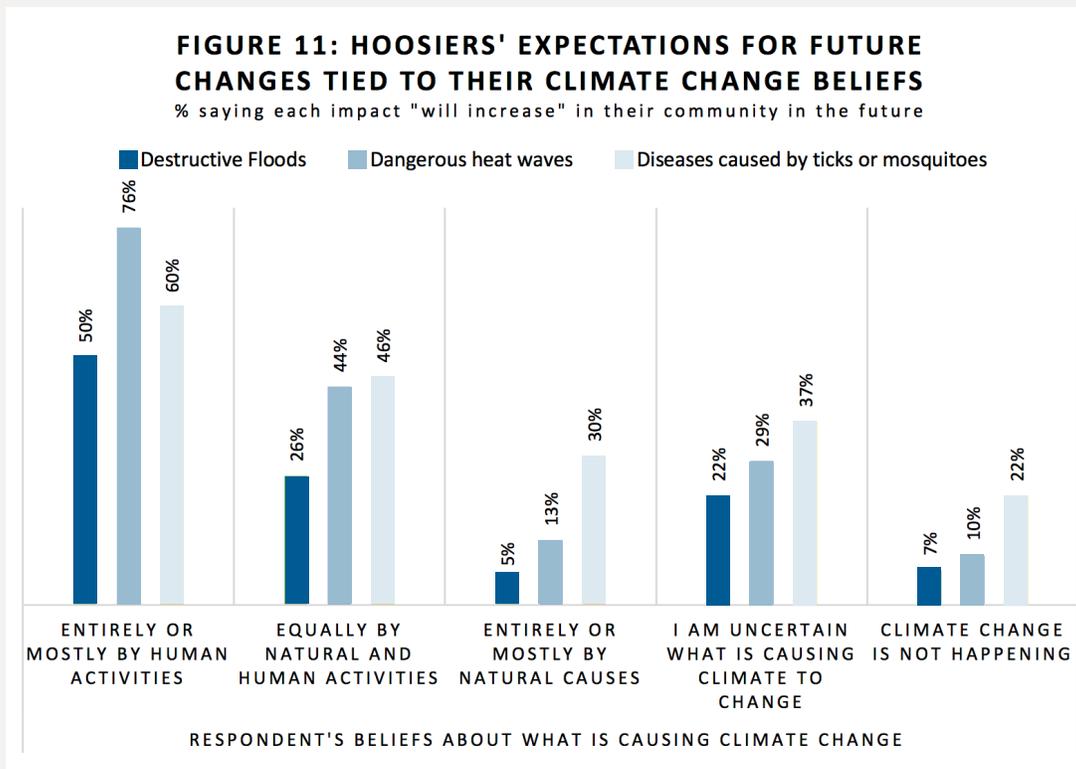
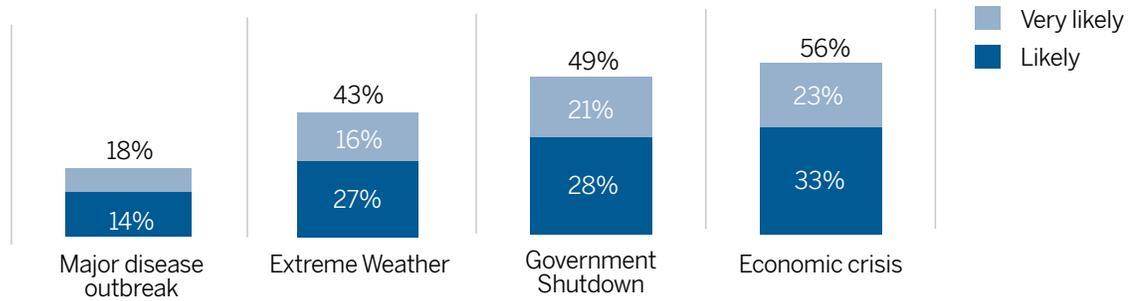


FIGURE 12: FEW HOOSIERS ANTICIPATED BEING IMPACTED BY MAJOR DISEASE OUTBREAK IN NEXT DECADE, MOST CONCERNED ABOUT THE ECONOMY

Question: How likely do you think it is that your family will be harmed by any of the following possible event?



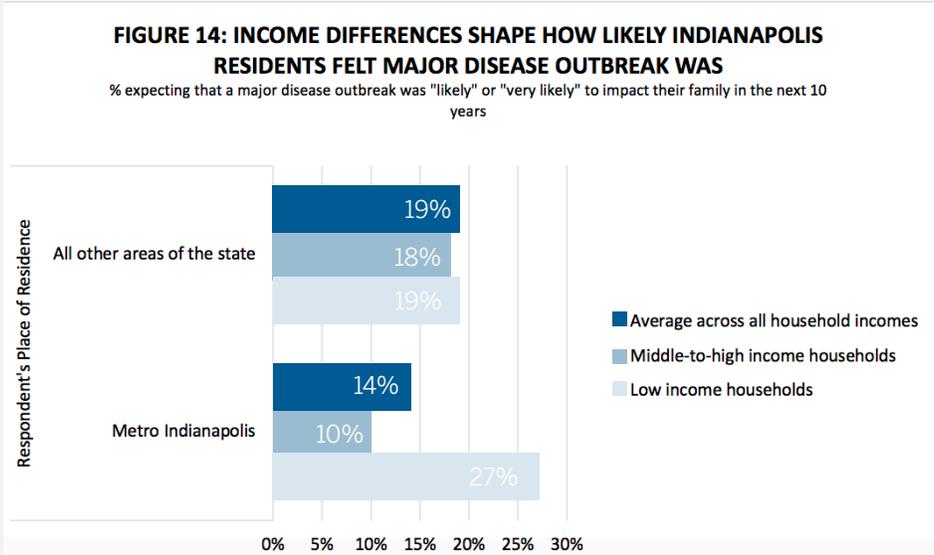
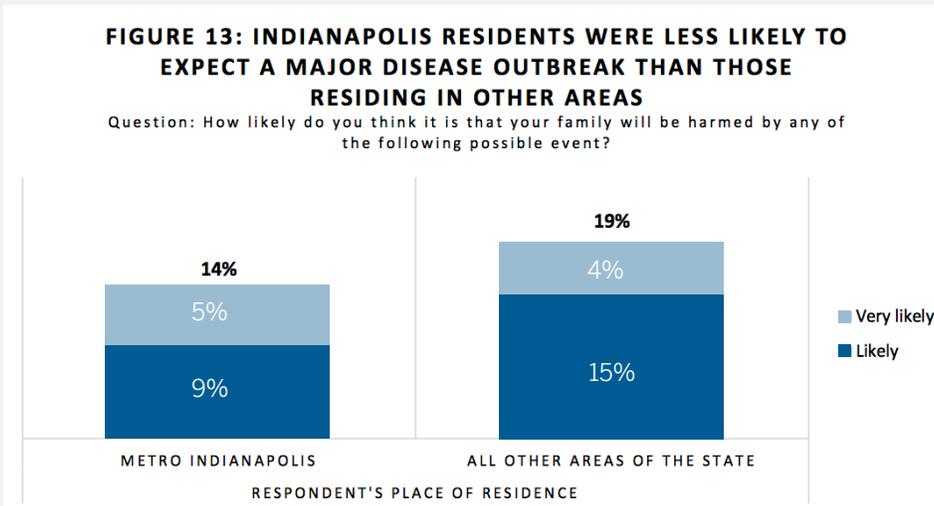
What crises are Hoosiers anticipating? We asked survey respondents how likely, in their estimation, it was that within the next decade that their family’s well-being would be impacted by a variety of major events: extreme weather, government shutdown, economic crisis or major disease outbreak. Economic crisis (23 percent) and government shutdown (21%) were the events that respondents were most likely to feel were “very likely” to impact them in this timeframe. It is also clear that when our respondents received their surveys in the fall of 2019, few were anticipating that in only a few months the world would experience the spread of a deadly virus such as COVID-19. Indeed, a major disease outbreak was the event least anticipated by our respondents. Over half (52 percent) of the Hoosiers we surveyed felt it was “unlikely” or “very unlikely” that a major disease outbreak would impact them in the next decade (results not shown), with only 4 percent of the state feeling this type of event was very likely to harm them (Figure 12).



SPOTLIGHT: COVID-19 and Hoosiers' expectations about future crises

At the time of this report, COVID-19 has been particularly impactful on major cities across the United States, including Indianapolis. Despite being Indiana's current epicenter for the disease's outbreak, our results suggest that when compared with residents of other cities, towns, and regions of the state, Indianapolis residents were on average less likely to expect their family's lives to be impacted by a major disease outbreak over the next 10 years (Figure 13).

However, upon a closer look, we see a stark divide based on household income among the city's residents. Lower-income Hoosiers living in Indianapolis, defined by earning \$0-\$44,999 annually, were more likely to expect to be harmed by a major disease outbreak than those in the same income bracket who lived in other areas of the state (27 percent to 19 percent respectively, Figure 14). In contrast, respondents in middle-to-high income households in Indianapolis were less likely than those in other regions with the same income to expect this event (10 percent compared to 18 percent respectively). As some recent evidence suggests, lower-income individuals are more at risk from COVID-19 for a variety of reasons (Mansoor, 2020). Our results imply that, in Indiana and especially Indianapolis, lower-income individuals were also more likely to expect to suffer from this type of crises, among other impacts (see also Figure 18).



How concerned are Hoosiers? A majority of Hoosiers anticipate that climate change will harm the people and the plants and animals of Indiana. Most agree, too, that climate change is already adversely affecting other Americans (Figure 15). Almost 30 percent believe that these changes will affect the people of Indiana a “great deal,” with only around 15 percent believing that they will be personally harmed “a great deal” (Figure 16). Few tend to believe that the majority of Hoosiers in their community are concerned about the potential dangers of extreme weather events (Figure 17).

FIGURE 15: MAJORITY OF HOOSIERS THINK CLIMATE CHANGE IS HARMING PEOPLE IN THE UNITED STATES NOW

Percentage responding to: When will climate change harm people in the US?; results exclude those who do not believe climate change is happening (n=1,295)

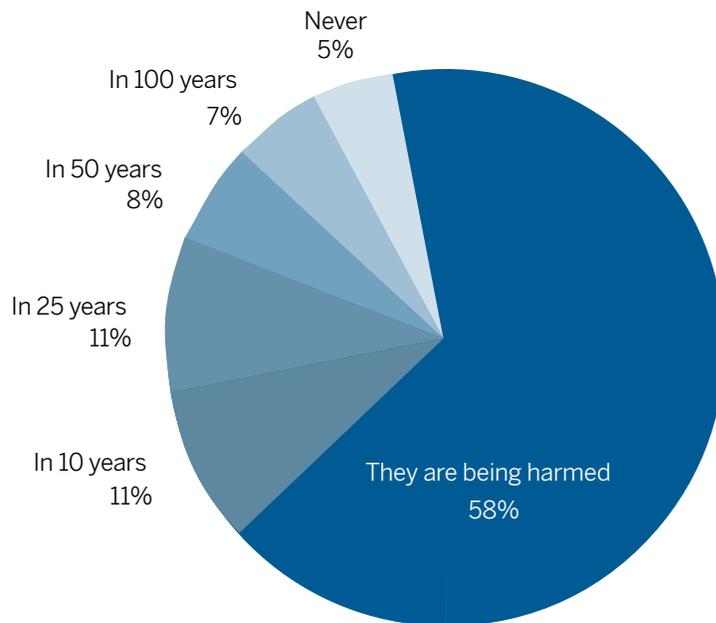


FIGURE 16: MANY HOOSIERS EXPECT CLIMATE CHANGE WILL HARM INDIANA SPECIES, RESIDENTS, OR THEMSELVES

Percentage reporting the amount of harm climate change will cause to the following areas; results exclude those who do not believe climate change is happening (n=1,295)

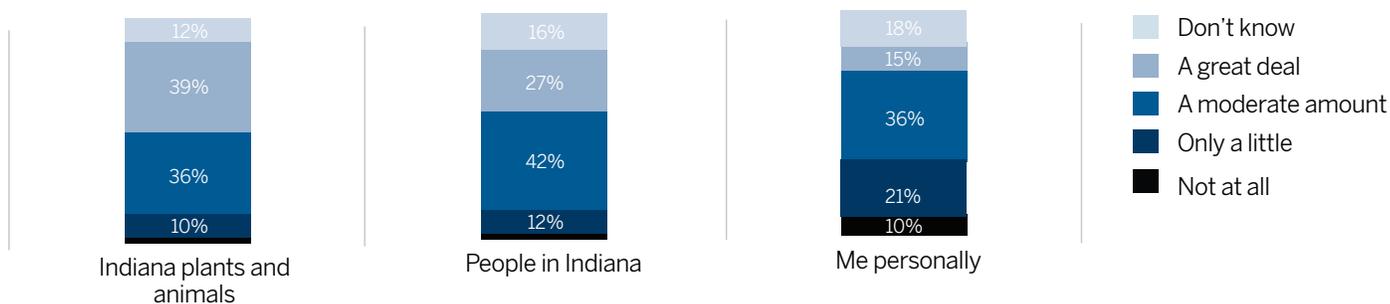
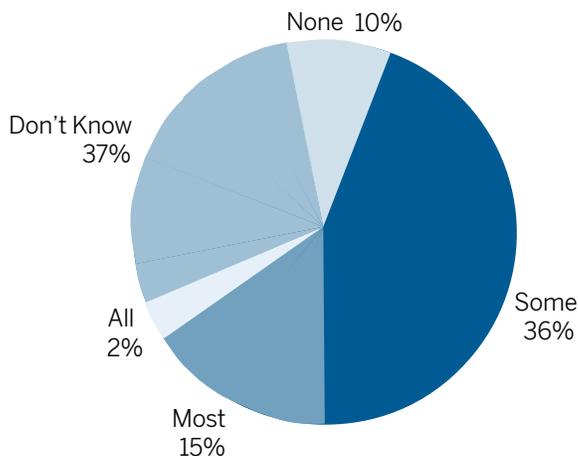


FIGURE 17: HOW MANY PEOPLE DO HOOSIERS BELIEVE ARE CONCERNED ABOUT THE RISK POSED BY WEATHER EXTREMES IN THEIR COMMUNITY?



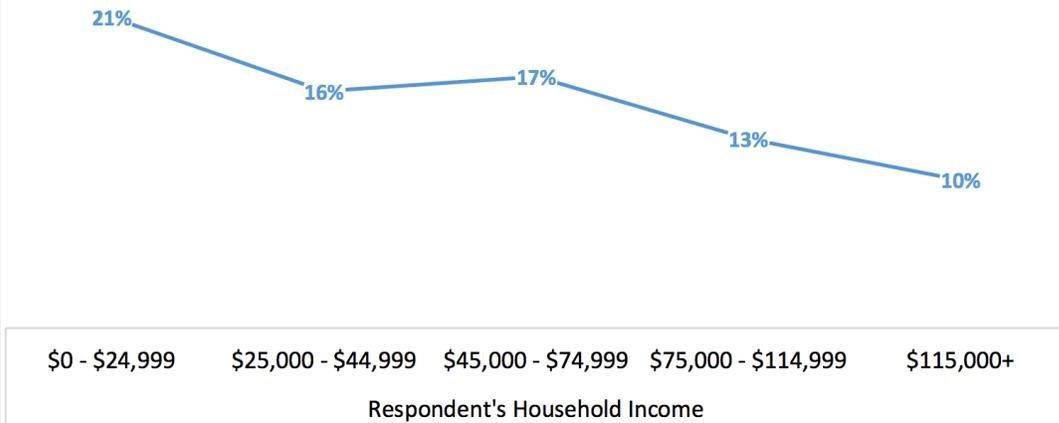
SPOTLIGHT: Income and perceived risk from climate change

Lower-income households are among the most at-risk from climate change. Limited economic resources constrain their capacity to adapt their homes or lifestyles to new risks and, often, they are already more exposed to environmental risks such as pollution from industrial production (Tol et al. 2004).

Perhaps reflecting these circumstances, Hoosiers in lower-income households are more likely to perceive that climate change will harm them personally a “great deal” than those in high-income households (Figure 18). Lower-income populations, therefore, may require less emphasis on the need to prepare for climate change and could benefit from programs and policies that provide resources which enable these communities to act on their already higher level of personal concern.

FIGURE 18: LOWER INCOME HOOSIERS MORE LIKELY TO BELIEVE CLIMATE CHANGE WILL PERSONALLY HARM THEM "A GREAT DEAL"

% that expect climate change will personally harm them “a great deal”;
results exclude those who do not believe climate
is changing, (N=1295)



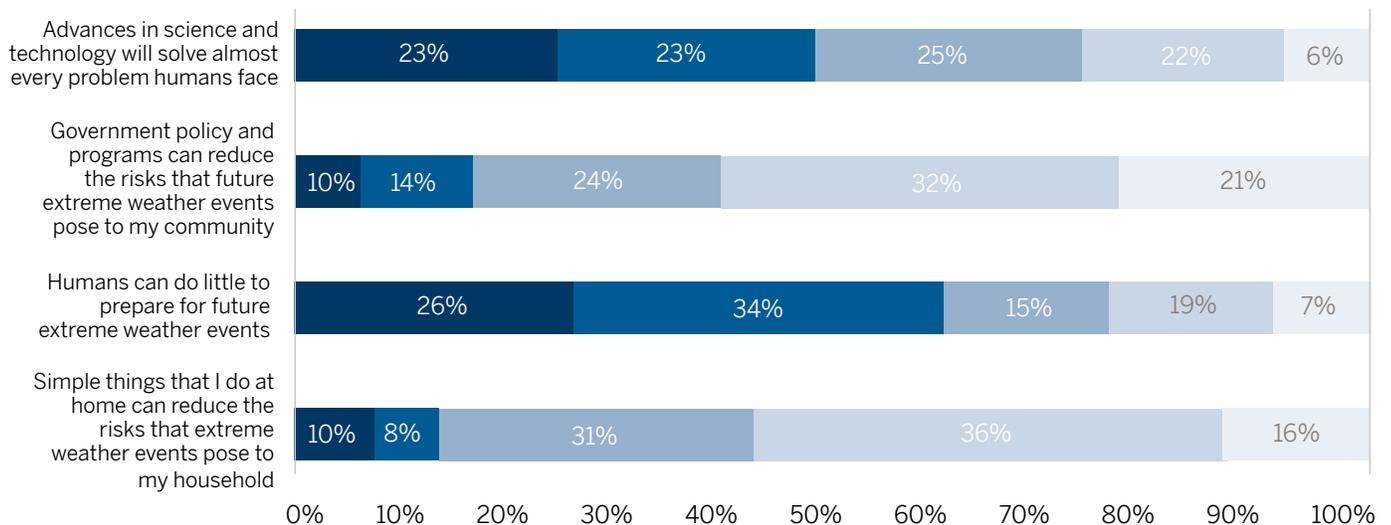
What do Hoosiers believe is possible and effective?

Hoosiers' responses to environmental change will be shaped by what they consider to be possible. Only a minority (26 percent) of our respondents agree that humans can "do little" to prepare for extreme weather effects. A majority believe that public policy (53 percent) and unspecified "simple things" (52 percent) have the potential to mitigate the impact of these risks upon their communities and themselves (Figure 19).

FIGURE 19: MOST HOOSIERS AGREE IT IS POSSIBLE TO PREPARE FOR FUTURE EXTREME WEATHER EVENTS

% expressing their level of agreement with the following statements:

Strongly disagree
 Somewhat disagree
 Neutral
 Somewhat agree
 Strongly agree



Are Hoosiers taking action at home? We looked at people’s household responses to the impact of adverse climate conditions, asking both what they currently do and what they might like to do in the future. Their answers reveal that some basic practices for reducing energy consumption and mitigating the impact of heat and cold, such as use of shade trees, improved insulation, and high-efficiency light bulbs, are already in common use (Figure 20 and 21). Other practices, such as installation of solar panels, registered significant interest among Hoosiers as a potential future household activity (Figure 21).

FIGURE 20: WHAT CLIMATE-RESILIENCE ACTIVITIES ARE HOOSIERS PERSONALLY DOING?

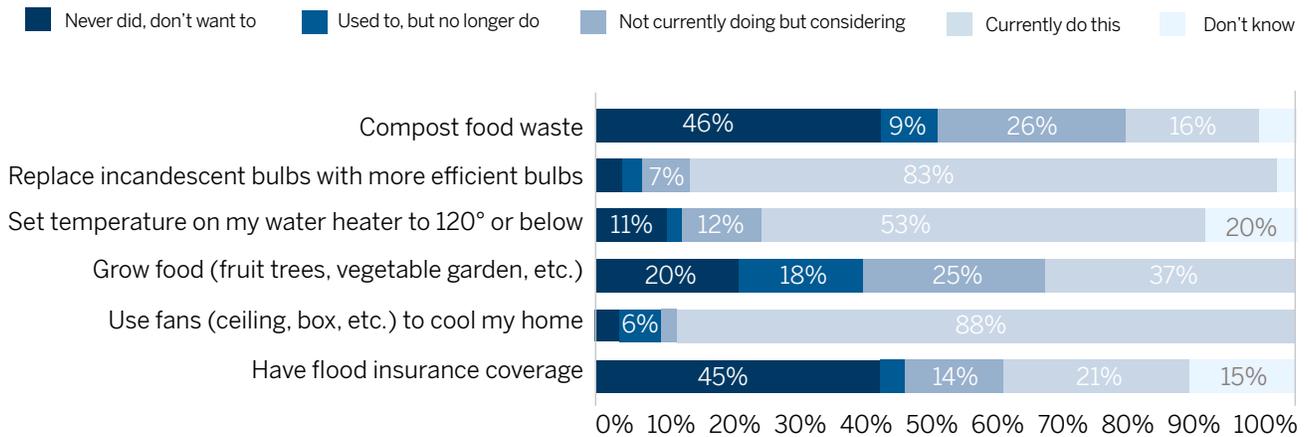
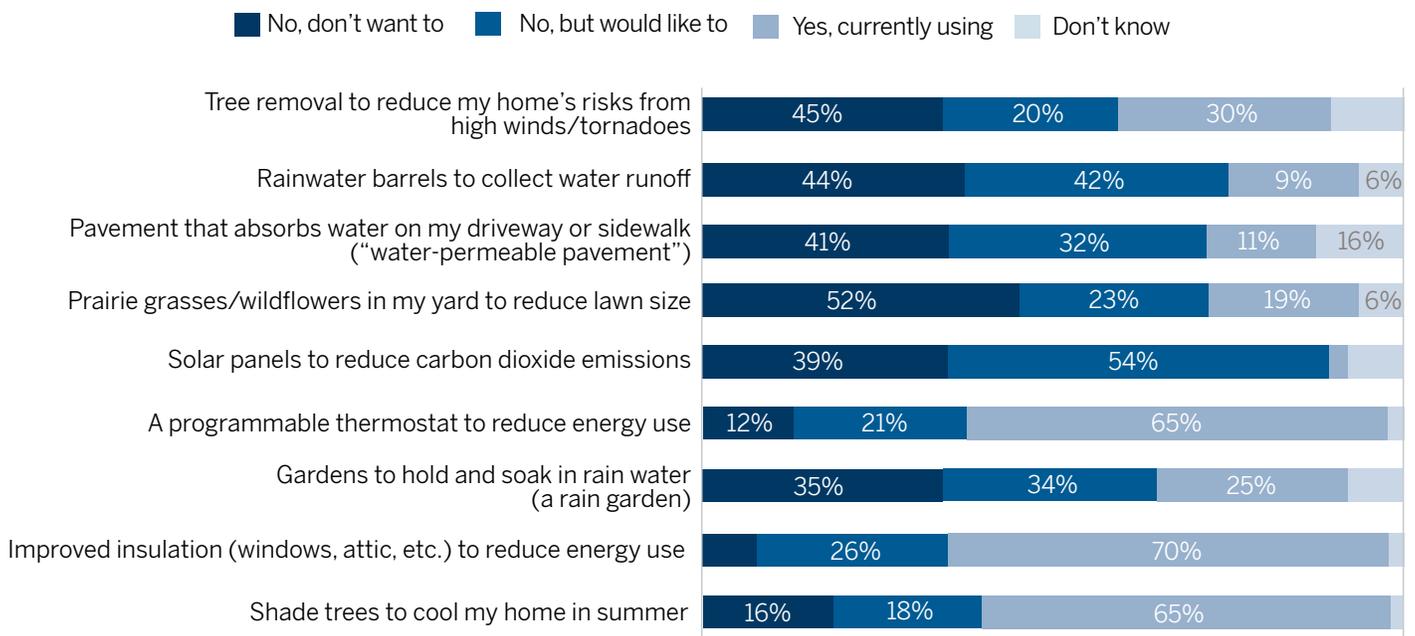


FIGURE 21: WHAT HOUSEHOLD PRACTICES ARE HOOSIERS CURRENTLY USING OR INTERESTED IN USING THAT WOULD AFFECT THEIR HOME'S PREPAREDNESS FOR CLIMATE CHANGE?

*Includes only homeowners (n=1,122)



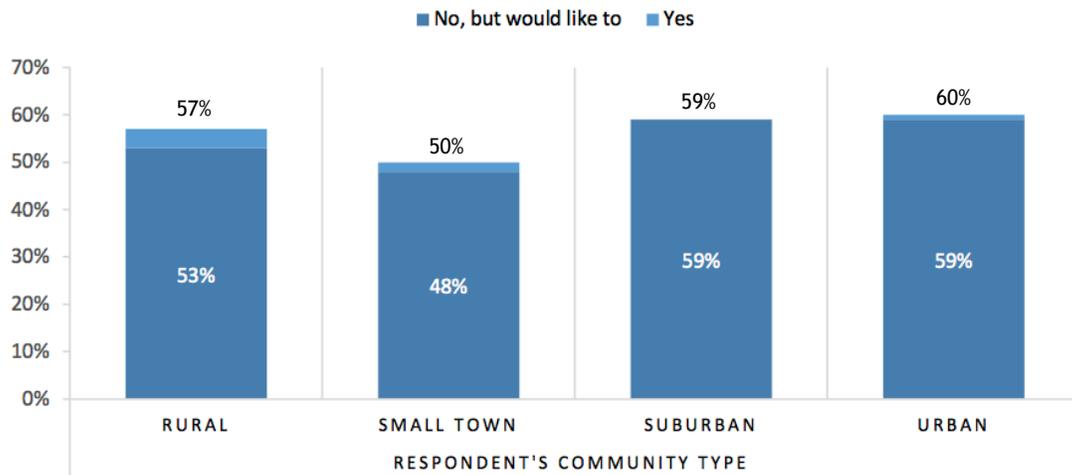
SPOTLIGHT: Rural Hoosiers and interest in solar panels

Solar panels are a key means to reduce emissions from homes, while also providing greater resilience to the potential increase in severe storm-related power outages in the Midwest. Despite the fact that rural Hoosiers were less than half as likely as urban Hoosiers to believe climate change is caused by humans (22 percent versus 43 percent respectively), they were roughly equally likely to have installed or currently wish to install solar panels on their homes. Importantly, the question specified that the solar panels would “reduce carbon dioxide emissions” (Figure 22)

Whether rural residents specifically wanted to use solar panels for this reason or desired to add them for a different benefit, such as energy independence or lower power-costs, is unclear at this time. What this finding does suggest is that people across the state want to add solar panels—even those in rural areas who may not hold views about climate change that accord with scientific evidence. Policy that supports this effort could have significant impacts in terms of reducing Indiana’s greenhouse gas emissions and increasing the resilience of our energy grid.

FIGURE 22: URBAN AND RURAL HOOSIERS EXPRESS DESIRE FOR SOLAR PANELS ON THEIR HOMES

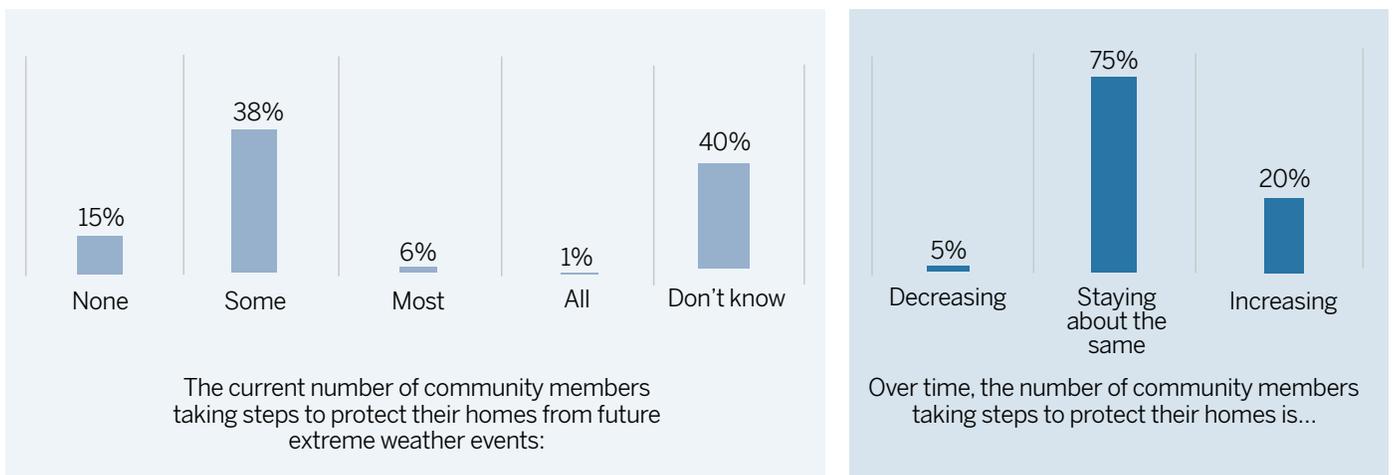
% stating “no, but would like to” or “yes, currently doing this” in reference to installing solar panels at their homes to reduce carbon dioxide emissions;
*includes only homeowners (n=1,122)



Do Hoosiers perceive others in their community to be acting? Despite the commonness of people’s reported efforts (or desires) to improve their home’s resilience in the face of a changing climate, only a very limited number of Hoosiers (6 percent) assumed that “most” other residents of their communities had taken the same precautions, and the majority (75 percent) perceived that the number of their neighbors taking these actions was not increasing (Figure 23).

FIGURE 23: FEW HOOSIERS ASSUME MOST COMMUNITY MEMBERS ARE TAKING HOUSEHOLD-RESILIENCE ACTIONS

Questions related to respondent’s perception of their community



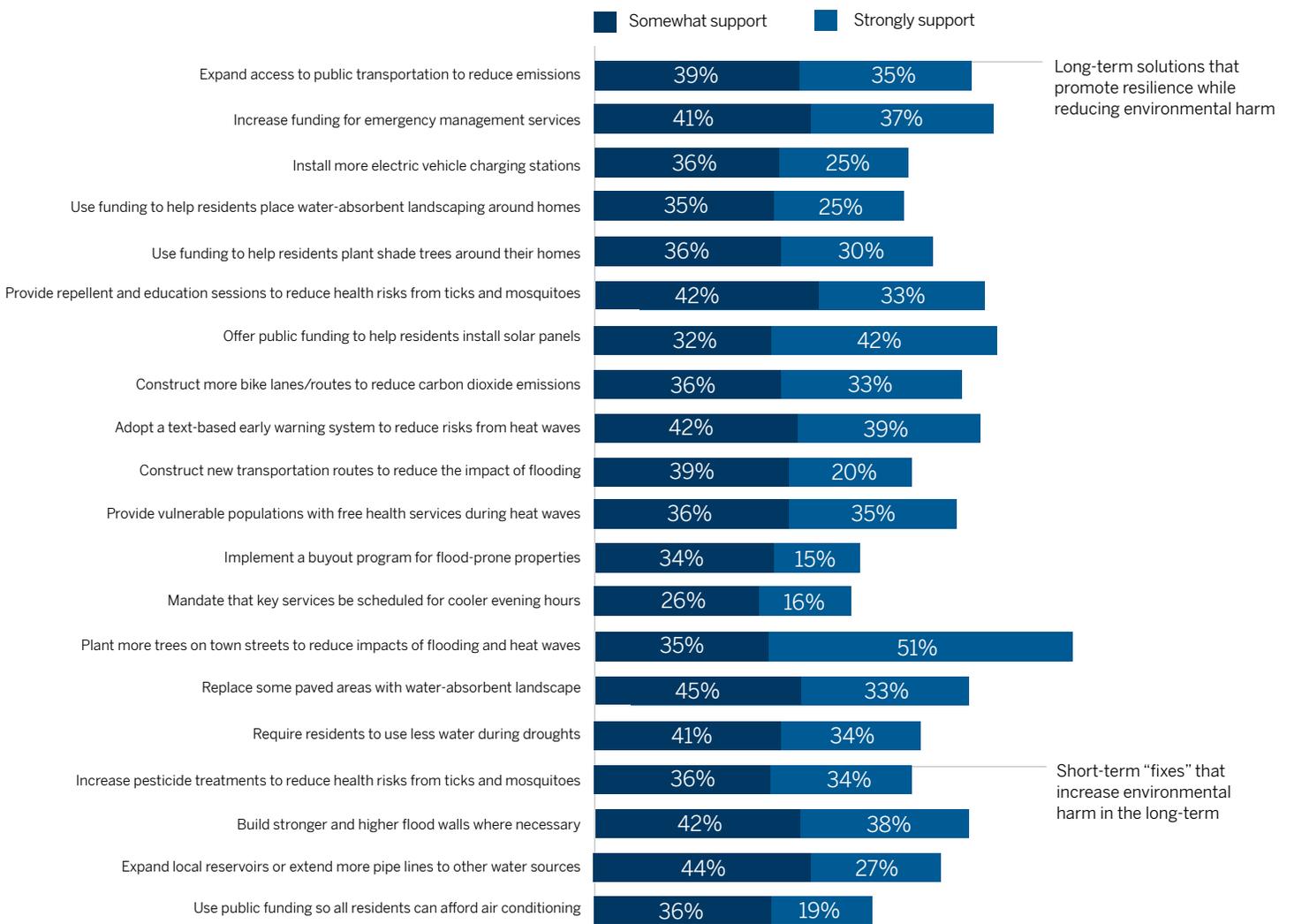
What climate-related programs and policies do Hoosiers support? Beyond the level of particular household practices, Hoosiers also offered their thoughts on the efficacy of wider-scale efforts to prepare for extreme weather events. Given a wide range of options toward which to apply hypothetical tax dollars, HLS respondents favored a combination of conservation-oriented measures (such as replacing paved areas with water-absorbent landscapes) and engineering-based solutions, such as building higher floodwalls to prevent flooding or extending additional pipelines to minimize the impact of drought. In other words, a significant number of Hoosiers tend to favor some government assistance in ameliorating the adverse impacts of environmental change—but respondents show no clear preference for solutions that may favor long-term resilience over shorter-term relief.

In Figure 24, we categorize the survey’s proposed policies and programs by two groups: *Short-term fixes* and *long-term solutions*. *Short-term fixes*, as the name implies, provide risk-reduction benefits, but likely increase future risks by accelerating environmental harms or failing to alter key risky behaviors. Many *long-term* solutions may be harder to implement but ultimately provide greater resilience in that they promote changes to our existing, environmentally harmful behavior. At this point, we cannot conclude there are any differences in Hoosiers’ support for resilience policies and practices based on these categories.



FIGURE 24: WHAT CLIMATE-RESILIENCE POLICIES AND PROGRAMS DO HOOSIERS SUPPORT?

Question: If Indiana were to seek tax money to reduce the risk of extreme weather, how would you like to see that money used in your community?



Who should pay for climate policy in Indiana? Because all of the above questions assumed the existence of public funds, we also asked our survey respondents who they thought should bear the cost of such initiatives (Figure 25). Nearly half said that they would support a statewide income tax increase of up to 1 percent. Well over half reported that they would support such a tax—if it were levied solely on households earning more than \$165,000 per year (roughly three times the state’s current median household income). And a greater majority, still, said that they would favor such a tax if it were levied specifically on corporations, in proportion to the degree to which they are responsible for emissions of pollution.

Yet despite these signs of statewide support, we found that only 7 percent of Hoosiers felt that “most” of their fellow community members would be likely to support additional tax levies earmarked for the purpose of addressing climate risk, and half reported they “don’t know” how their community feels about these taxes. This contrast may suggest that many in Indiana are not discussing these issues with their neighbors. Similarly, the vast majority of respondents (72 percent) felt the number of their community members supportive of these taxes was not changing (Figure 26).

FIGURE 25: WHO SHOULD PAY FOR CLIMATE RESILIENCE POLICY IN THE STATE?

Level of public support for distributing the burden of a hypothetical tax to address extreme weather events facing the state

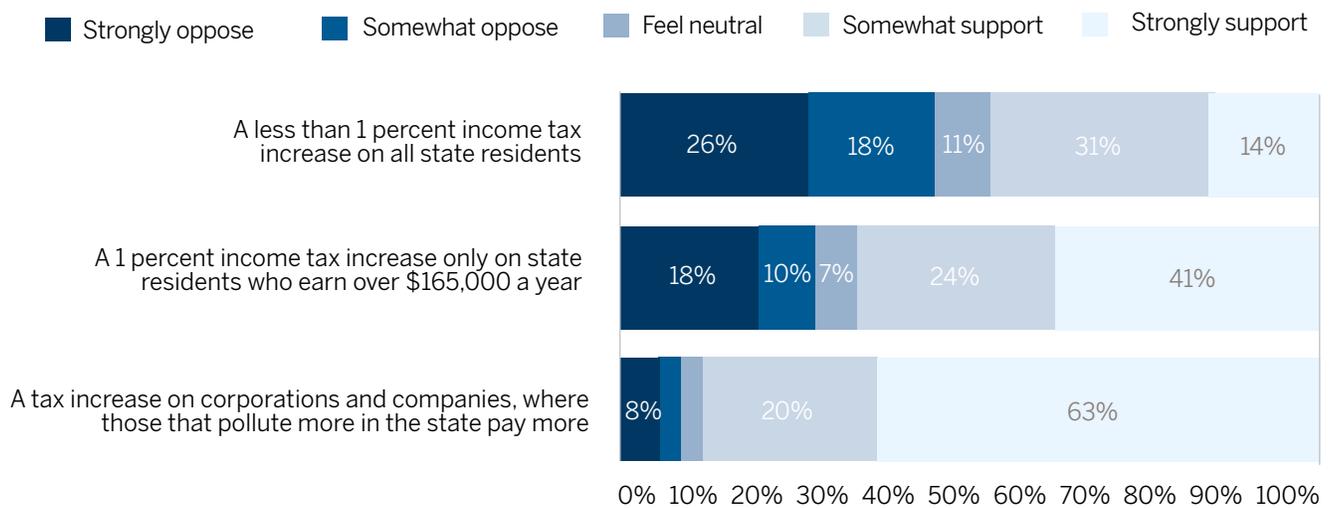
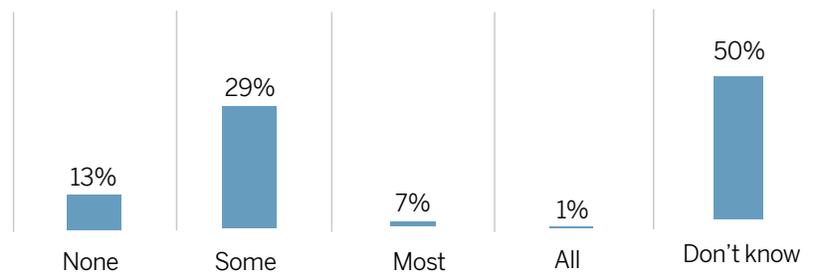
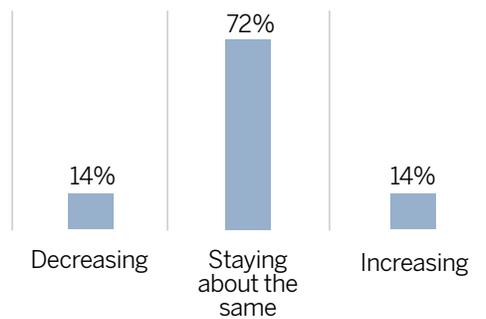


FIGURE 26: MANY “DON’T KNOW” HOW THEIR COMMUNITY VIEWS CLIMATE-RELATED POLICY, FEW FEEL SUPPORT IS INCREASING

Questions related to respondent’s perception of their community



The current number of community members supportive of using tax money on policies or projects that protect the community from future extreme weather events:



Over time, the number of people supportive of using tax money on policies or projects is ...



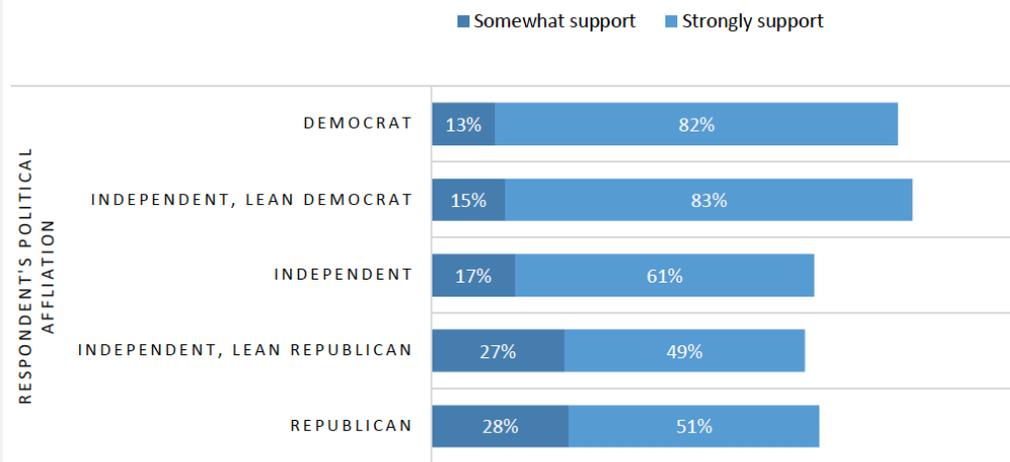
SPOTLIGHT: Politics and Taxes

Political ideology is among the most significant factors shaping how Americans view the issue of climate change (McCright et al. 2016). While this fact remains true among Hoosiers and in our data, some measures to address weather extremes receive majority support from the public regardless of their personal politics.

Addressing climate change, and its impacts, requires state-level action and likely new revenue streams to fund these actions. Toward this end, the majority of Hoosiers from all political affiliations—when faced with a situation that demanded increased public funding—supported raising a tax on businesses based on the amount of pollution they create (Figure 27). This should not be viewed as a question about the viability of the policy so much as it is a way of gauging the relative support for who Hoosiers feel should pay for addressing environmental risks in the state.

FIGURE 27: MAJORITY OF HOOSIERS FROM ALL POLITICAL AFFILIATIONS SUPPORT TAXING POLLUTERS TO ADDRESS WEATHER-RELATED RISKS

Question: To address extreme weather facing the state, how much would you support a tax increase on corporations and companies, where those that pollute the most pay the most



LOOKING FOR MORE?

In the coming months—through public appearances, news features, media releases, and scholarly studies—the HLS team will provide additional details from the survey responses and continue to highlight insights and provoke further research into how Indiana residents, scientists, businesses, and public officials can work together to build resilient communities. Scientists predict that over the next 50 years our state's average temperature will increase by 5°F to 6°F. Additionally, we will see more frequent and intense precipitation events, leading to more flooding, especially in the spring. Some areas of the state could see up to a six-fold increase in the number of extremely hot days (over 95°F) in the next 30 years (Widhalm et al. 2018). You can find complete survey results—and tailor them to address the questions that most interest you and your neighbors—on our interactive website, <https://eri.iu.edu/tools-and-resources/hoosier-life-survey-opinion-map.html>.

Appendix 1: Methods

The survey from which data for this report was drawn was sent out to 10,000 Hoosiers between August and December 2019. The survey focused on gathering a broad range of information related to Indiana residents' views of their community, environmental changes and risk, climate change beliefs, the household- and community-level actions they were taking or supported being pursued, and their personal values. Surveys were sent to Indiana households using a spatially stratified sampling approach. To ensure adequate coverage of people across the entire state and for later geographically specific analysis, our team developed eight in-state regions, defined by clusters of counties. Each of Indiana's 92 counties was included in a region. From each region, 1,250 home addresses were drawn at random from the United States Postal Service's list (for a total of 10,000), which was purchased from a private address-based sampling vendor.

In mailing surveys to these households, a modified Dillman approach was used with a total of five mailing waves (Dillman, Smyth, & Christian, 2014). In an initial wave of mailings, households received a cover letter informing them about the survey, noting the confidentiality of their responses and asking them to fill out the survey online. A link to the online survey and user ID number were provided in the cover letter. Roughly two weeks later, a reminder postcard was sent to all sampled individuals who had yet to respond.

After approximately another two-week period, respondents who had yet to fill out the survey online were sent a paper booklet version of the survey and another cover letter requesting their participation. A final mailing wave, containing another booklet and cover letter, was sent to all remaining non-participants after another two-week period. Both the initial contact for the web-based survey and the mail-based version contained \$2 pre-incentive payments. Upon completing the survey, respondents could request a \$20 Amazon or Walmart gift card. In total, our response rate was just over 27 percent. Case-wise deletion analysis was used to address missing data in this report, resulting in 1,500 cases being examined. Patterns of missing data were explored, as were relationships between missing responses and key demographics. No consistent patterns emerged, nor were strong relationships identified. In terms of differences between the full and complete samples, average age of respondents was the only significantly different demographic variable, with the complete-case sample being only very marginally younger. Future HLS reports and data products may use data imputation methods depending on analysis type and the variables of interest. There is also the potential for some bias introduced during the question design.

To ensure accurate population estimates for this analysis, survey weights were used. Weighting incorporates: (1) a base weight adjustment for unequal probabilities of selection due to disproportionate stratified sampling by region and due to the number of adults in the household, (2) a differential nonresponse adjustment to correct for unequal response rates by stratum/region, and (3) a calibration adjustment to 2018 American Community Survey estimates on gender, age, education, race, and Hispanic origin in the Indiana adult population. Weights were trimmed and scaled to the unweighted number of respondents.



Appendix 2:

Figure 1 Few Hoosiers feel well informed about how to prepare for climate-related extreme weather events

| | Extreme weather events that may affect me or my family | Household practices to reduce risks from extreme weather events | Programs or policies that can reduce the risks future extreme weather |
|---------------------|--|---|---|
| Not at all informed | 3% | 7% | 17% |
| Slightly informed | 16% | 31% | 40% |
| Moderately informed | 54% | 47% | 34% |
| Very informed | 28% | 16% | 10% |

Figure 2 Older Hoosiers more likely to feel "very informed" about extreme weather risks and Policies to prepare for them

| | % very informed about risks from extreme weather | % very informed about household practices to reduce risks from extreme weather events | % very informed about programs and policies that can reduce the risk from future weather extremes |
|-----------------------------|--|---|---|
| Ages 18-22 | 18% | 12% | 9% |
| Ages 23-38 | 18% | 9% | 7% |
| Ages 39-54 | 32% | 20% | 11% |
| Ages 55-73 | 35% | 19% | 12% |
| Ages 74 and over | 39% | 15% | 15% |
| Average across all Hoosiers | 30% | 14% | 9% |

Figure 3 How much do you trust each of the following sources to provide you with information about how to prepare for extreme weather

| | My family, friends, and neighbors | Media sources | Local public officials | State public officials | Indiana-based scientists | Nationally or internationally-based scientists | My own judgement |
|--------------------|-----------------------------------|---------------|------------------------|------------------------|--------------------------|--|------------------|
| Don't trust at all | 5% | 10% | 16% | 13% | 7% | 10% | 4% |
| Trust some | 57% | 63% | 60% | 56% | 47% | 46% | 38% |
| Trust a lot | 36% | 26% | 19% | 26% | 35% | 37% | 55% |
| Don't know | 3% | 1% | 6% | 5% | 11% | 7% | 3% |

Figure 4 Trust in information source differs by type of community

| | Type of Community | | | |
|--|-------------------|------------|----------|-------|
| | Rural | Small Town | Suburban | Urban |
| Trust family, friends and neighbors a lot | 36% | 36% | 35% | 37% |
| Trust media sources a lot | 24% | 24% | 27% | 31% |
| Trust local public officials a lot | 16% | 20% | 17% | 26% |
| Trust state public officials a lot | 24% | 28% | 34% | 26% |
| Trust Indiana scientists a lot | 28% | 35% | 37% | 43% |
| Trust national or international scientists a lot | 27% | 37% | 41% | 48% |
| Trust my own judgment a lot | 60% | 53% | 50% | 60% |

Figure 5

Most Hoosiers think climate change is happening

| | Is climate change happening? |
|------------|------------------------------|
| No | 14% |
| Yes | 75% |
| Don't know | 11% |

Figure 6

Nearly 80% of Hoosiers who believe the climate is changing also believe that humans play a causal role to at least some degree

| | Do you think climate change is caused... |
|--|--|
| Entirely or mostly by human activities | 39% |
| Equally by natural and human activities | 40% |
| Entirely or mostly by natural causes | 10% |
| I am uncertain what is causing climate to change | 11% |

Figure 7 Scientific consensus not recognized by 1/3 of Hoosiers

| | How do Hoosiers perceive scientific consensus on climate change? |
|--|--|
| Most scientists think climate change is happening | 57% |
| There is a lot of disagreement among scientists about whether or not climate change is happening | 28% |
| Most scientists think climate change is not happening | 2% |
| Don't know enough to say | 14% |

Figure 8 Greater media consumption associated with greater recognition of scientific consensus

| | Never | Several times a year or less, but not never | At least once a month, but less than once a week | Weekly | Daily |
|--|-------|---|--|--------|-------|
| Most scientists think climate change is happening | 39% | 19% | 16% | 10% | 14% |
| There is a lot of disagreement among scientists about whether or not climate change is happening | 5% | >1% | 2% | 3% | 2% |
| Most scientists think climate change is not happening | >1% | 29% | 29% | 29% | 28% |
| Don't know enough to say | 56% | 49% | 54% | 59% | 57% |

Figure 9 The environmental changes that Hoosiers see varies considerably by type of change

| | Heavy rains | Floods | Tornadoes | Droughts | Heat Waves | Extreme Cold | Severe Wind | Ticks | Mosquitoes |
|----------------|-------------|--------|-----------|----------|------------|--------------|-------------|-------|------------|
| Less | 7% | 16% | 21% | 17% | 6% | 11% | 6% | 9% | 9% |
| About the same | 60% | 52% | 58% | 57% | 51% | 54% | 58% | 44% | 43% |
| More | 28% | 21% | 10% | 14% | 36% | 29% | 29% | 19% | 36% |
| Don't Know | 5% | 12% | 12% | 12% | 7% | 6% | 7% | 28% | 12% |

Figure 10 Many Hoosiers anticipate impacts of climate change will grow in the future

| | Destructive floods | Dangerous Heat waves | Dangerously cold temperatures | Diseases caused by ticks or mosquitoes | Destructive Droughts | Damaging winds or tornadoes |
|--------------------------|--------------------|----------------------|-------------------------------|--|----------------------|-----------------------------|
| Will decrease | 5% | 2% | 6% | 5% | 4% | 3% |
| Will stay about the same | 51% | 41% | 45% | 34% | 48% | 49% |
| Will increase | 29% | 46% | 38% | 45% | 31% | 36% |
| Don't know | 15% | 11% | 12% | 16% | 17% | 12% |



Figure 23 Hoosiers assume few community members are taking household-resilience actions

| The number of community members taking steps to protect their homes from future extreme weather events | | | |
|--|------------|------------------------|------------|
| None | Some | Most | All |
| 15% | 38% | 6% | 1% |
| The number of community members taking steps to protect their homes is... | | | |
| Don't know | Decreasing | Staying about the same | Increasing |
| 40% | 5% | 75% | 20% |

Figure 12 How likely do you think it is that your family will be harmed by any of the following possible event?

| | Major disease outbreak | Government shutdown | Extreme weather | Economic crisis |
|---------------|------------------------|---------------------|-----------------|-----------------|
| Very unlikely | 16% | 5% | 8% | 3% |
| Unlikely | 36% | 15% | 19% | 14% |
| Feel neutral | 25% | 28% | 25% | 21% |
| Likely | 14% | 28% | 27% | 33% |
| Very likely | 4% | 21% | 16% | 23% |

Figure 13

Indianapolis residents were less likely to expect a major disease outbreak than those residing in other areas

| Respondent's Place of Residence | | |
|---------------------------------|--------------------|------------------------------|
| | Metro Indianapolis | All other areas of the state |
| Very Unlikely | 17% | 15% |
| Unlikely | 44% | 35% |
| Feel neutral | 24% | 25% |
| Likely | 9% | 15% |
| Very likely | 3% | 4% |

Figure 14

Income differences shape how likely indianapolis residents felt major disease outbreak was

| Respondent's Place of Residence | | Very unlikely | Unlikely | Feel neutral | Likely | Very Likely | Don't Know |
|---------------------------------|--------------------|---------------|----------|--------------|--------|-------------|------------|
| Metro Indianapolis | Low income | 13% | 31% | 25% | 16% | 11% | 5% |
| | Middle-High income | 16% | 48% | 25% | 7% | 3% | 1% |
| All other areas of the state | | Very unlikely | Unlikely | Feel neutral | Likely | Very Likely | Don't Know |
| | Low income | 14% | 29% | 27% | 13% | 5% | 12% |
| | Middle-High income | 18% | 36% | 24% | 15% | 4% | 4% |



Figure 15 Majority of Hoosiers think climate change is harming people in the United States now

| Respondent's Place of Residence | | |
|----------------------------------|--------------------|------------------------------|
| | Metro Indianapolis | All other areas of the state |
| Low income households | 23% | 23% |
| Middle-to-high income households | 9% | 17% |
| Average across household incomes | 12% | 19% |

Figure 16 Many hoosiers expect climate change will harm Indiana Species, residents or themselves

| | Indiana plants and animals | People in Indiana | Me personally |
|-------------------|----------------------------|-------------------|---------------|
| Not at all | 3% | 3% | 10% |
| Only a little | 10% | 12% | 21% |
| A moderate amount | 36% | 42% | 36% |
| A great deal | 39% | 27% | 15% |
| Don't know | 12% | 16% | 18% |

Figure 17

How many people do Hoosiers believe are concerned about the risk posed by weather extremes in their community?

| Concerned about the risks extreme weather events pose to the community | |
|--|-----|
| None | 10% |
| Some | 37% |
| Most | 15% |
| All | 2% |
| Don't know | 37% |

Figure 18

Lower income Hoosiers more likely to believe climate change will personally harm them "a great deal."

| Respondent's Household Income | | | | | |
|-------------------------------|----------------|---------------------|---------------------|----------------------|------------|
| | \$0 - \$24,999 | \$25,000 - \$44,999 | \$45,000 - \$74,999 | \$75,000 - \$114,999 | \$115,000+ |
| Not at all | 3% | 9% | 11% | 9% | 17% |
| Only a little | 11% | 17% | 23% | 25% | 25% |
| A moderate amount | 41% | 35% | 34% | 38% | 36% |
| A great deal | 21% | 16% | 17% | 13% | 10% |
| Don't know | 25% | 23% | 16% | 16% | 12% |

Figure 19 Most Hoosiers agree it is possible to prepare for future extreme weather events

| | Simple things that I do at home can reduce the risks that extreme weather events pose to my household | Humans can do little to prepare for future extreme weather events | Government policy and programs can reduce the risks that future extreme weather events pose to my community | Advances in science and technology will solve almost every problem humans face |
|-------------------|---|---|---|--|
| Strongly disagree | 10% | 26% | 10% | 23% |
| Somewhat disagree | 8% | 34% | 14% | 23% |
| Neutral | 31% | 15% | 24% | 25% |
| Somewhat agree | 36% | 19% | 32% | 22% |
| Strongly agree | 16% | 7% | 21% | 6% |

Figure 20 What climate-resilience activities are Hoosiers personally doing?

| | Have flood insurance coverage | Use fans (ceiling, box, etc.) to cool my home | Grow food (fruit trees, vegetable garden, etc.) | Set temperature on my water heater to 120° or below | Replace incandescent bulbs with more efficient bulbs | Compost food waste |
|--------------------------------------|-------------------------------|---|---|---|--|--------------------|
| Never did, don't want to | 45% | 4% | 20% | 12% | 5% | 46% |
| Used to, but no longer do | 5% | 6% | 18% | 3% | 4% | 9% |
| Not currently doing, but considering | 14% | 2% | 25% | 12% | 7% | 26% |
| Currently do this | 21% | 88% | 37% | 53% | 83% | 16% |
| Don't know | 15% | 0% | 1% | 20% | 1% | 4% |

Figure 21 What household practices are Hoosiers currently using or interested in using that would Affect their home's preparedness for climate change?

| | Shade trees to cool my home in summer | Improved insulation (windows, attic, etc.) to reduce energy use | Gardens to hold and soak in rain water (a rain garden) | A programmable thermostat to reduce energy use | Solar panels to reduce carbon dioxide emissions | Prairie grasses/wild flowers in my yard to reduce lawn size | Pavement that absorbs water on my driveway or sidewalk ("water-permeable pavement") | Rainwater barrels to collect water runoff | Tree removal to reduce my home's risks from high winds/tornadoes |
|-----------------------|---------------------------------------|---|--|--|---|---|---|---|--|
| No, don't want to | 16% | 2% | 35% | 12% | 39% | 52% | 41% | 44% | 45% |
| Not but would like to | 18% | 26% | 34% | 21% | 54% | 23% | 32% | 42% | 20% |
| Yes, Currently | 65% | 70% | 25% | 65% | 2% | 19% | 11% | 9% | 30% |
| Don't know | 1% | 2% | 6% | 1% | 5% | 6% | 16% | 6% | 5% |

Figure 22 Urban and rural Hoosiers express desire for solar panels on their homes

| | Type of Community | | | |
|-----------------------|-------------------|------------|----------|-------|
| | Rural | Small town | Suburban | Urban |
| No, don't want to | 38% | 46% | 35% | 34% |
| No, but would like to | 53% | 48% | 59% | 59% |
| Yes, currently using | 4% | 2% | 0% | 1% |
| Don't know | 5% | 4% | 6% | 7% |

Figure 23

Hoosiers assume few community members are taking household-resilience actions

| The number of community members taking steps to protect their homes from future extreme weather events | | | |
|--|------------|------------------------|------------|
| None | Some | Most | All |
| 15% | 38% | 6% | 1% |
| The number of community members taking steps to protect their homes is... | | | |
| Don't know | Decreasing | Staying about the same | Increasing |
| 40% | 5% | 75% | 20% |

Figure 24

What climate-resilience policies and programs do Hoosiers support?

| | Use public funding so all residents can afford air conditioning | Expand local reservoirs or extend more pipelines to other water sources | Build stronger and higher flood walls where necessary | Increase pesticide treatments to reduce health risks from ticks and mosquitoes |
|------------------|---|---|---|--|
| Strongly oppose | 19% | 4% | 5% | 8% |
| Somewhat oppose | 17% | 10% | 7% | 15% |
| Somewhat support | 36% | 44% | 42% | 36% |
| Strongly support | 19% | 27% | 38% | 34% |
| Unsure | 9% | 15% | 8% | 7% |

Figure 24 Cont. What climate-resilience policies and programs do Hoosiers support?

| | Require residents to use less water during droughts | Replace some paved areas with water-absorbent landscape | Plant more trees on town streets to reduce impacts of flooding and heat waves | Mandate that key services be scheduled for cooler evening hours |
|------------------|---|---|---|---|
| Strongly oppose | 10% | 8% | 4% | 19% |
| Somewhat oppose | 10% | 6% | 6% | 22% |
| Somewhat support | 41% | 45% | 35% | 26% |
| Strongly support | 34% | 33% | 51% | 16% |
| Unsure | 6% | 8% | 6% | 17% |

Figure 24 Cont. What climate-resilience policies and programs do Hoosiers support?

| | Implement a buy-out program for flood-prone properties | Provide vulnerable populations with free health services during heat waves | Construct new transportation routes to reduce the impact of flooding | Adopt a text-based early warning system to reduce risks from heat waves |
|------------------|--|--|--|---|
| Strongly oppose | 11% | 10% | 9% | 6% |
| Somewhat oppose | 17% | 13% | 15% | 7% |
| Somewhat support | 34% | 36% | 39% | 42% |
| Strongly support | 15% | 35% | 21% | 39% |
| Unsure | 23% | 8% | 18% | 6% |

Figure 24 Cont. What climate-resilience policies and programs do Hoosiers support?

| | Construct more bike lanes/routes to reduce carbon dioxide emissions | Offer public funding to help residents install solar panels | Provide repellent and education sessions to reduce health risks from ticks and mosquitoes | Use funding to help residents plant shade trees around their homes |
|------------------|---|---|---|--|
| Strongly oppose | 10% | 10% | 8% | 11% |
| Somewhat oppose | 13% | 10% | 12% | 16% |
| Somewhat support | 36% | 32% | 42% | 36% |
| Strongly support | 33% | 42% | 33% | 30% |
| Unsure | 7% | 7% | 6% | 8% |

Figure 24 Cont. If Indiana were to seek tax money to reduce the risk of extreme weather, how would you like to see that money used in your community?

| | Use funding to help residents place water-absorbent landscaping around homes | Install more electric vehicle charging stations | Increase funding for emergency management services | Expand access to public transportation to reduce emissions |
|------------------|--|---|--|--|
| Strongly oppose | 14% | 11% | 5% | 6% |
| Somewhat oppose | 16% | 13% | 10% | 11% |
| Somewhat support | 35% | 36% | 41% | 39% |
| Strongly support | 25% | 25% | 37% | 35% |
| Unsure | 10% | 16% | 8% | 9% |

Figure 25 Who should pay for climate resilience policy in the state?

| | A tax increase on corporations and companies, where those that pollute more in the state pay more | A 1% income tax increase only on state residents who earn over \$165,000 a year | A less than 1% income tax increase on all state residents |
|------------------|---|---|---|
| Strongly oppose | 8% | 18% | 11% |
| Somewhat oppose | 5% | 10% | 26% |
| Feel neutral | 4% | 7% | 18% |
| Somewhat support | 20% | 24% | 31% |
| Strongly support | 63% | 41% | 14% |

Figure 26 Many "Don't know" how their community views climate-related policy, few feel support is increasing

| The number of community members supportive of using tax money on policies or projects that protect the community from future extreme weather events: | | | | |
|--|------------------------|------------|-----|------------|
| None | Some | Most | All | Don't Know |
| 13% | 29% | 7% | 1% | 50% |
| The number of people supportive of using tax money on policies or projects is... | | | | |
| Decreasing | Staying about the same | Increasing | | |
| 14% | 72% | 14% | | |

Figure 27 Majority of Hoosiers from all political affiliations support taxing polluters to address weather-related risks

| Respondent's political affiliation | | | | | |
|------------------------------------|------------|------------------------------|-------------|----------------------------|----------|
| | Republican | Independent, lean Republican | Independent | Independent, lean Democrat | Democrat |
| Strongly oppose | 10% | 13% | 11% | 0% | 1% |
| Somewhat oppose | 8% | 9% | 5% | 0% | 2% |
| Feel neutral | 4% | 3% | 6% | 2% | 2% |
| Somewhat support | 28% | 27% | 17% | 15% | 13% |
| Strongly support | 51% | 49% | 61% | 83% | 82% |



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