

# CISA

## Needs Assessment Survey: Summary

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**RISA**  
Regional Integrated Sciences  
and Assessments



# Executive Summary

The Carolinas Integrated Sciences & Assessments (CISA) surveyed the climate needs of various communities in North Carolina and South Carolina, receiving 313 responses over a one month period. The respondents came from across the Carolinas and represent diverse stakeholders operating at different geographic scales and representing different sectors. The planning, government, and NGO communities were well represented and the survey reached many respondents who had not engaged with CISA before.

The survey respondents indicated a need for climate information to integrate into planning and resilience actions underway through their organizations. While not required to do so, respondents actively seek to incorporate climate information and needs into their work, and express moderate confidence in their ability to find this information. This climate information is then used in a variety of ways. This summary reports our findings across three main sections.

## Impacts

In this section, we summarize which climate impacts are of most concern for our overall sample and for key subgroups. All respondents report high concern with extreme events, particularly heavy precipitation, and singular events. Concern over other impacts showed some variation based on sector and scale of work.

## Information

In this section, we summarize which types of climate information are most useful or needed by respondents. A key highlight is that respondents are seeking action-oriented information that enables them to move beyond simply understanding potential climate impacts.

## Action

In this section, we summarize how respondents are incorporating climate information into their planning and resilience work. A synthesis of respondents' answers shows a growing incorporation of climate into routine planning, with a wide variety of planning types mentioned. Organizations are also looking to incorporate climate risk and resilience thinking across the board, especially in new short- or long-term plans that are being created now. Actions vary by subgroups, but commonalities include a need for funding opportunities, examples of success stories, and networking opportunities to learn from others (especially when information is distilled and summarized).

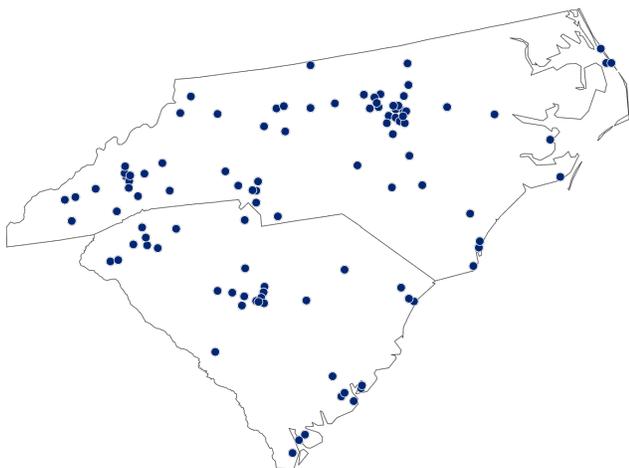
# Introduction

The goal of this survey was to learn about the needs for assistance with climate sensitive decisions across communities in the Carolinas. Climate can influence and impact decision making in a variety of sectors, including public health, coastal management, water resources management, land use and environmental management, and hazard/extreme event planning. This survey thus serves to inform CISA and other groups working around climate-sensitive decisions in the Carolinas.

## Methods

The survey received a total of 313 responses. The vast majority of respondents answered most of the main questions in the survey, with relatively few incomplete responses. Approximately half of survey respondents answered “grouping questions” (the level of geography they work in, sector, etc.). This report provides key highlights from these subgroups alongside the summary data, but readers should be aware that the number of responses for these subgroups is usually much smaller (see Table 1). Counts are reported in figure captions when feasible.

The survey was distributed using the snowball method in which we started with our contacts and asked that others share with anyone they thought might be interested in participating. CISA sent out the survey to its contacts (e.g. a newsletter list with 3000+ subscribers, social media with 500+ followers) and encouraged the distribution of the survey via other platforms and organizations. For example, the American Planning Association helped us reach out to planning communities in North and South Carolina and Soil & Water Conservation Districts distributed it to their email lists. Because of the diffuse dissemination method, the survey likely sampled some communities more than others and information is not available to calculate a response rate. The survey was active during the month of June, 2020.



**Survey Respondents Subgroup Breakdown**

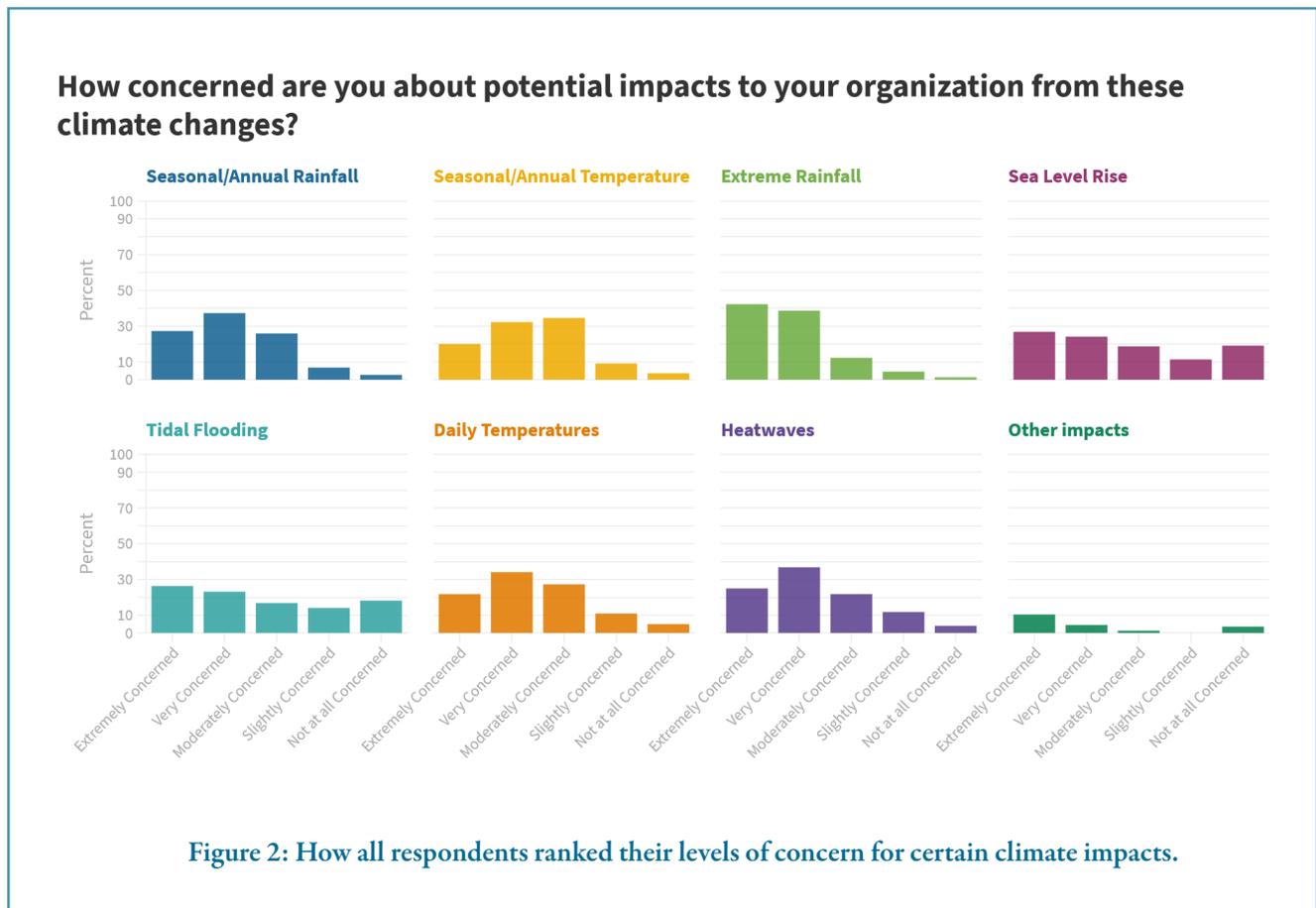
	Local	Regional/State
Planners	30	15
Other Government Officials	5	20
NGO	10	10
Consultants	5	9
Higher Education	4	5
Extension	7	2
Other / Blank	11	2

**Figure 1: Survey respondent breakdown. Left: Approximate location information was available for about 50% of respondents and does not include those who submitted from outside of the Carolinas. Right: Subgroups of respondents who provided both sector and scale of their work. Note there are a few respondents who provided the sector but not the scale.**

# Summary of Survey Results

## Climate Impacts of Concern

The opening question in this survey asked respondents how concerned they are about impacts of different projected climate changes on their organization’s work including, for example, their mission, infrastructure or operations. The overall results (see Figure 2) show extreme rainfall received the most responses of “extremely concerned” and “very concerned”, perhaps due to notable floods and the “rain bombs” that impacted the Carolinas in the past 5 years. Other climate-related hazards such as heat waves received high concern. Longer term trends in climate variables often received a mix of high and moderate levels of concern.

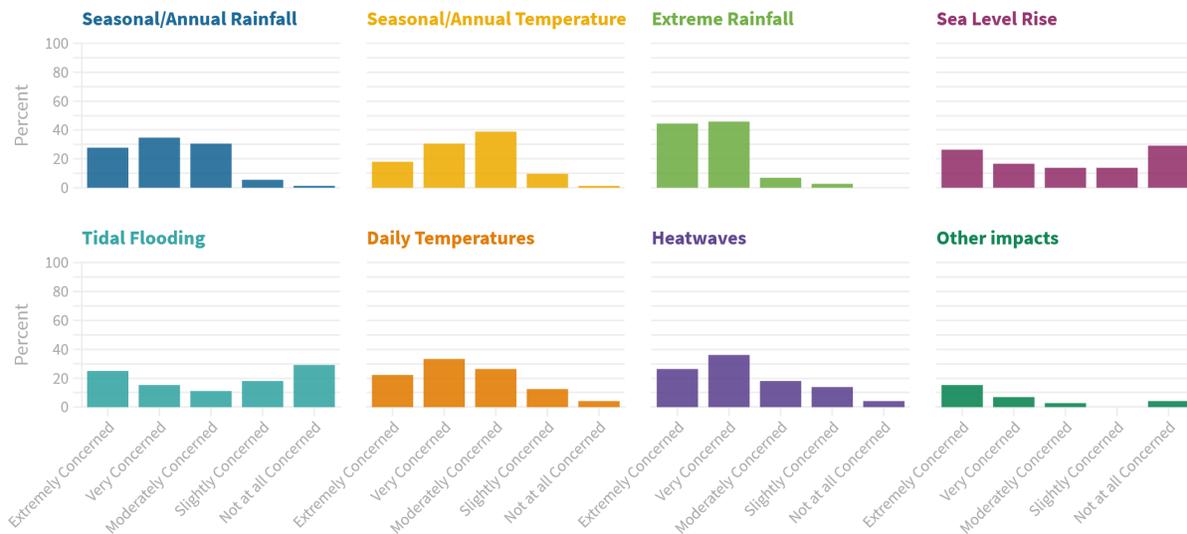


We further analyzed these responses by breaking down subgroups into the level of geography in which they work and by sector. There is overlap between the two subgroups; for example about 60% of planners said they worked at a local scale and 40% at a regional / state scale. Respondents working locally (see Figure 3) noted extremes (rainfall, heatwaves, and sea level rise (SLR) / tidal flooding) as important concerns, while respondents working at regional / state scales reported a wide variety of concerns. Local respondents also tended to note more “Other impacts”. Local NGOs and others raised concerns that climate impacts are of special concern for low income and minority communities. Regional / state scale respondents noted extremes (e.g. droughts, floods, fire) or seasonal timings (e.g. late freezes).

Many sectors have broad concerns (see Figure 4). Planners and other government officials ranked extreme rainfall and heat waves with notably high concern. The differences in sea level rise and tidal flooding at local scales may be due to the number of respondents who do not work in the coastal zone. Respondents who are “not at all” concerned about sea level rise and tidal flooding have similar answers to other climate impacts. NGOs listed a variety of “other impacts”, such as impacts to specific communities and impacts on socio-ecological systems (e.g. harmful algal blooms or reductions in the environmental quality of life). “Other impacts” among all other sectors was more narrowly focused on consequences of climate extremes (drought, fire, hurricanes) or threats to infrastructure.

### How concerned are you about potential impacts to your organization from these climate changes?

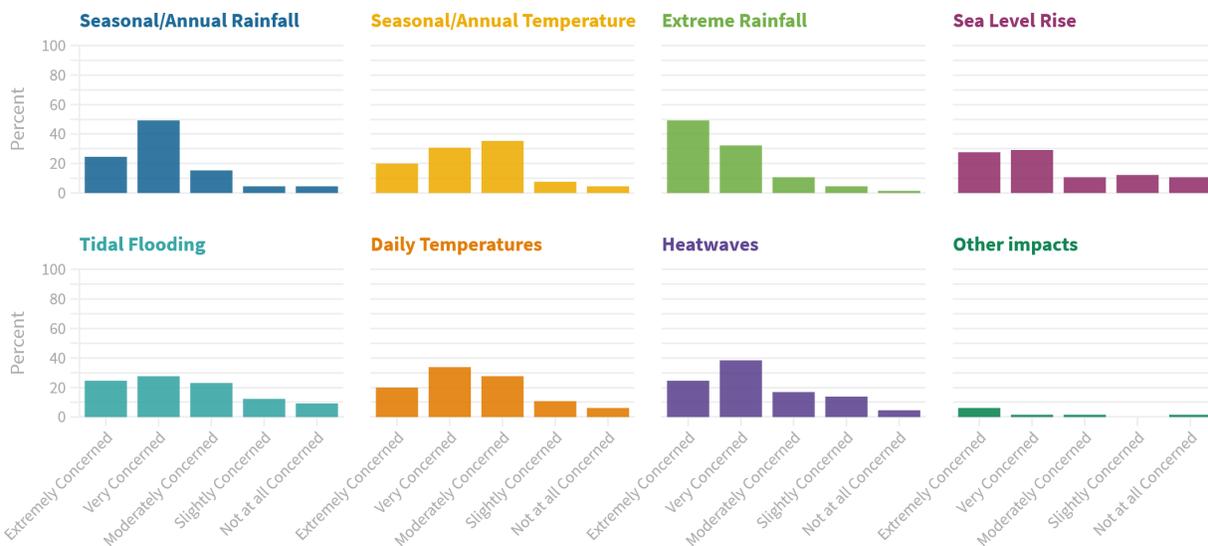
Respondents who work at local scales



Source: CISA Needs Assessment • N = 72

### How concerned are you about potential impacts to your organization from these climate changes?

Respondents who work at regional or state scales

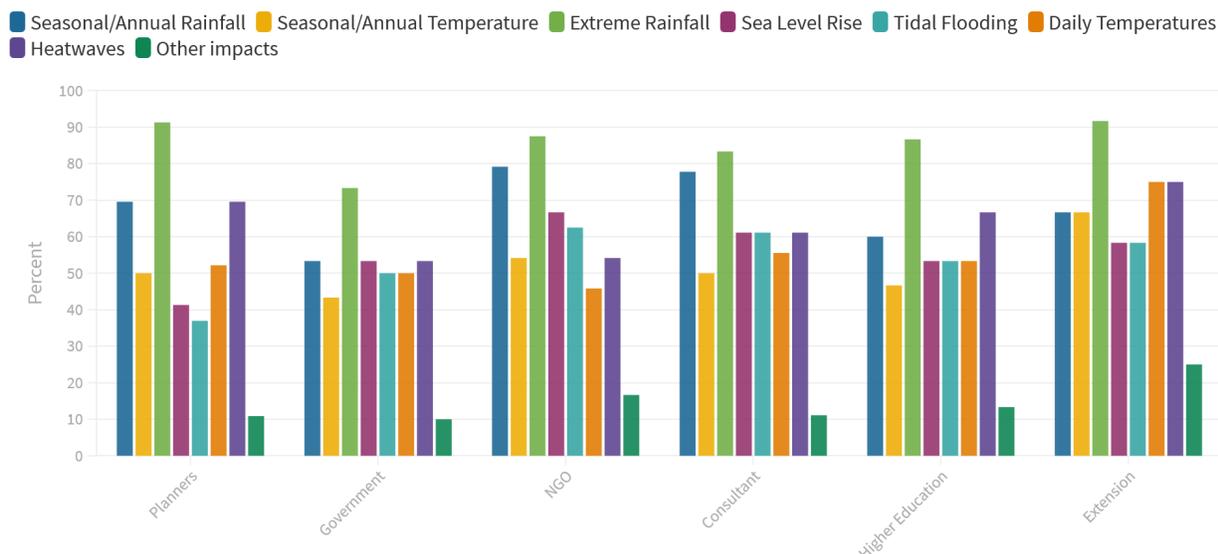


Source: CISA Needs Assessment • N = 65

**Figure 3: A breakdown of Figure 2 for respondents operating on the local scale (top) and regional / state scale (bottom). Note that the marked increase in “not at all concerned” for SLR and Tidal Flooding at local scales may be attributed to respondents who are far away from the coastal zone.**

## How concerned are you about potential impacts to your organization from these climate changes?

Areas of most concern by sector



Source: CISA Needs Assessment • Numbers represent those who selected "extremely concerned" and "very concerned"

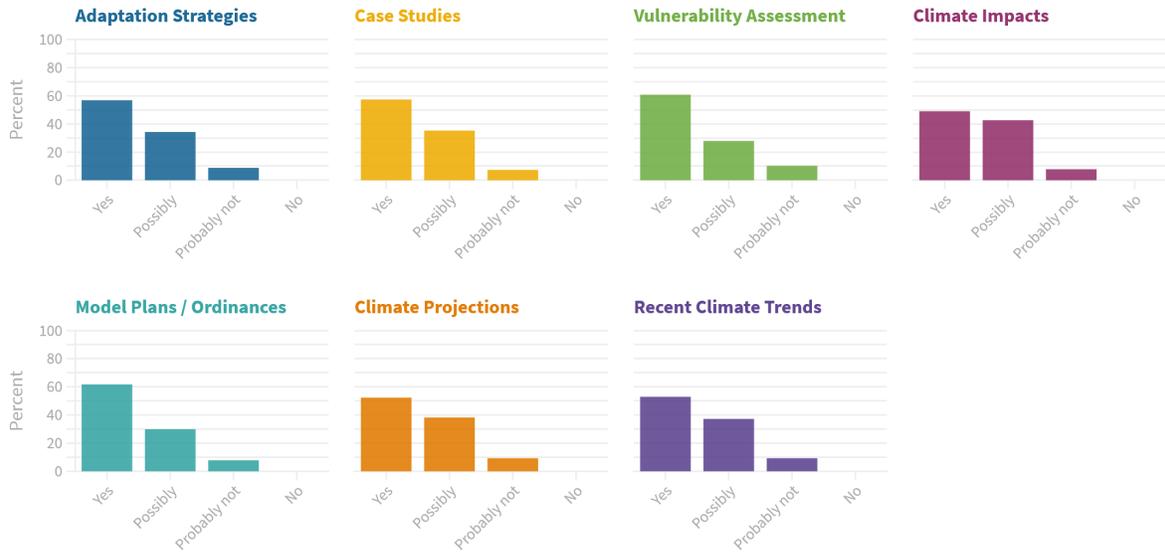
**Figure 4:** For respondents who provided information on the sector in which they are employed, this graph shows the number who ranked the impact as either “extremely concerned” or “very concerned”. Only sectors with >10 respondents are shown (N = 46, 30, 24, 18, 15, 12; respectively).

## Climate Adaptation Information Needs

A second group of questions gauged the climate adaptation information needs of the survey respondents. The first asked about assisting climate resilience work with different kinds of information (see Figure 5). Participants were asked to select all that apply. The summary findings suggest that action-oriented information like model plans / ordinances and vulnerability assessments would be useful information for about 60% of respondents, closely followed by adaptation strategies and case studies. Additional information on climate impacts, projections and trends is viewed as somewhat likely (~40-50%) to help support resilience work (also note the increase in “possibly” and fewer “yes” responses). While few indicate any particular information as unhelpful, the findings indicate that, in addition to information on climate changes and projections, more communities are seeking information to assist in developing responses.

A breakdown by subgroups (see Figure 6) supports this general view, noting that larger geographic scales as well as planners and consultants have a stronger relative preference for impacts data and climate projections. This interpretation is further supported by respondent’s text explanations, which mentioned “impact summaries” as a tool for “applied” policy solutions. Many respondents are interested in knowing how others make climate decisions, funding sources, model legislation, and other action-oriented information needs.

**Would additional information about any of the following help support your organization's climate resilience work?**

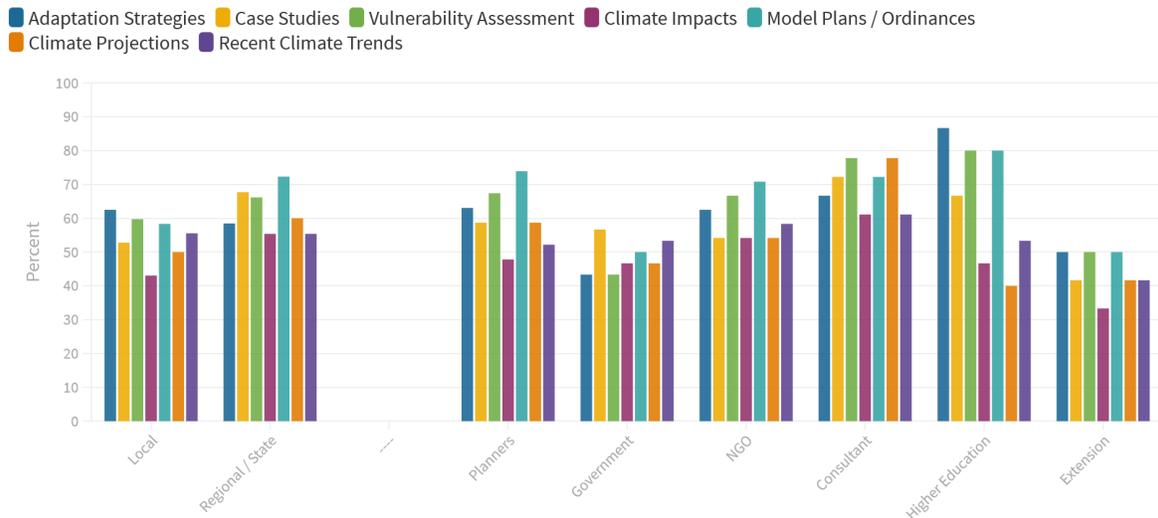


Source: CISA Needs Assessment • N = 204

**Figure 5: How all respondents characterized whether certain types of information would support their organization's climate resilience work.**

**Would additional information about any of the following help support your organization's climate resilience work?**

Most helpful, by subgroups



Source: CISA Needs Assessment • Numbers represent those who selected "yes"

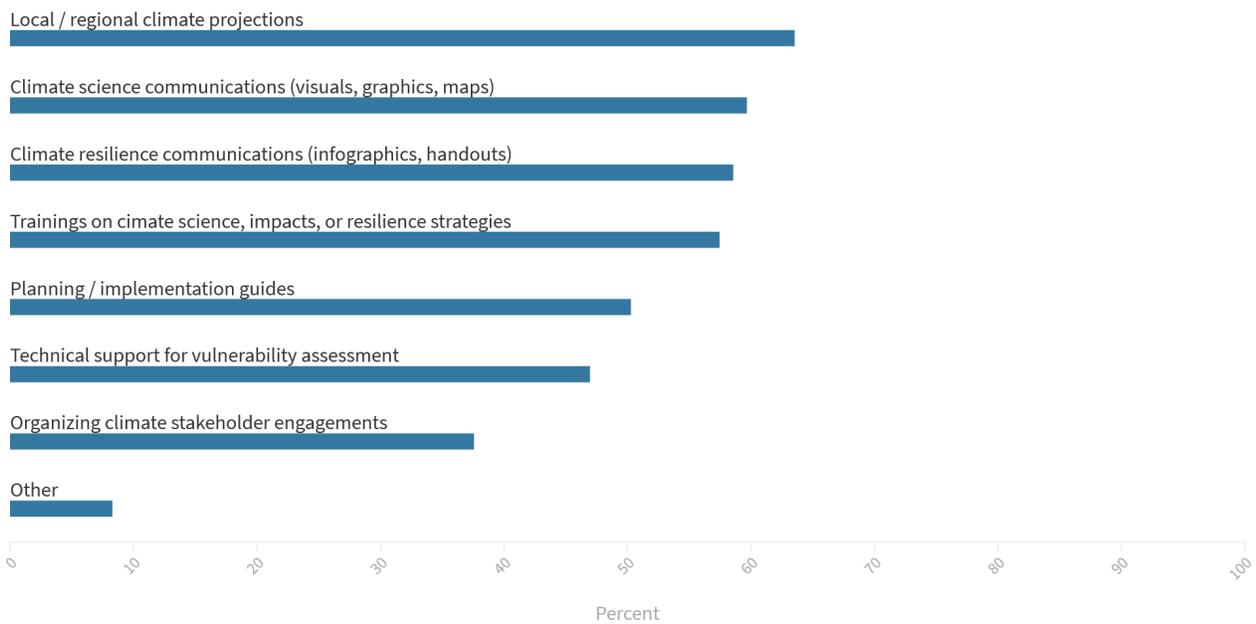
**Figure 6: A breakdown of Figure 5 by subgroups. On the left there is scale of work (local or regional/state), and on the right there is respondents' sectors. Note that the bars represent the most helpful information, signified by counting only "yes" responses to the question.**

A separate question asked what type of information would be most helpful in the next 1 to 3 years (see Figure 7). Downscaled climate projections jump in importance here, largely driven by planners and NGOs operating at a local scale (see Figure 8). Some additional comments provided with responses to this question suggest that the need is for information that is tightly summarized or that is “neutral” (e.g. does not mention the term “climate change” or comes from professional / trade groups). It is also possible that the increase in interest in climate projections is due to the difference in wording of the two questions. For example, climate projections may be helpful for reasons that do not relate “resilience work”. Multiple types of communications materials are also strongly indicated as helpful, both for the public and as inputs into decision making.

Finally, we asked respondents to rate their confidence in “knowing where to go to get the climate information you need”. Almost all respondents expressed some level of confidence, but 75% could still use some assistance in finding the right information. This did not vary substantially among any of the subgroups, suggesting there has been some success in connecting diverse groups to sources of information or communities of practice.

**“Almost all respondents expressed some level of confidence, but 75% could still use some assistance in finding the right information.”**

### What would be most helpful to you in the next 1 to 3 years?

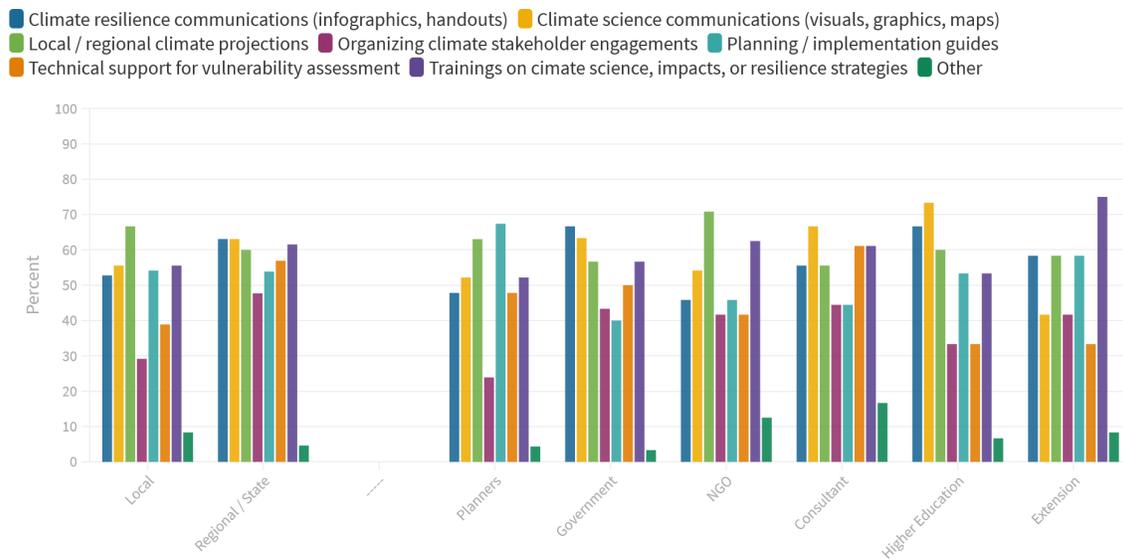


Source: CISA Needs Assessment • N = 181

**Figure 7: A summary of all respondents’ views of what would be most helpful in the near term.**

## What would be the most helpful to you in the next 1 to 3 years?

Most helpful, by subgroups



Source: CISA Needs Assessment

**Figure 8: A breakdown of Figure 7 by subgroups. Columns on the left represent scale of work (local or regional/state), and columns on the right represent sectors.**

## Climate Adaptation Actions

A third group of questions explored respondents' use of climate information in their planning processes. While none of respondents indicated they were required to use historical climate data or climate trends information in their planning processes, they did convey either past uses or interest in future uses of climate information. About a third of respondents expressed interest in integrating climate into a planning process (see Figure 9), and this often involved many different types of planning. The largest category was respondents indicating they would incorporate climate into multiple planning processes or as part of comprehensive plans. The "other" category included a wide array of items such as forest health, stormwater planning, salinization, threatened species planning, site and operations planning. Sea level rise was only called out as a focus of planning in a few instances. Further breakdowns by subgroup (see Figure 10) show some differing priorities, but they all include climate in multiple plan types.

**100% of survey respondents indicated they were not required to incorporate climate information in planning**

Timelines for action vary but can largely be grouped into either short or long time horizons (see Figure 11). Two-thirds of local scale respondents say they need climate trends for the next 1-10 years, while two-thirds of regional/state scale respondents say they need climate trends for a time horizon of 50 years or longer. Besides this notable divide, other subgroups did not show much variation in the time horizons of climate trends. One example of a "longer term" time horizon is a regional transportation plan where planning and implementation occur over a 50 year time span, or most comprehensive plans occurring over 10 - 30 year time spans. On the other hand, there are many "shorter term" time horizons such as incorporating climate into usual planning cycles or for funding local projects.

## Are you interested in integrating climate or climate resilience information into a specific planning process?



■ Multiple 
 ■ Other 
 ■ Comprehensive 
 ■ Watershed / Flooding 
 ■ Hazard Mitigation 
 ■ Local Codes 
 ■ Public Health 
 ■ Transportation 
 ■ Sea Level Rise 
 ■ Business Continuity

Source: CISA Needs Assessment • N = 103

Figure 9: The planning types mentioned by respondents. Most respondents described multiple planning types, and ~50% do not neatly fit into categories (coded as “Multiple” or “Other”).

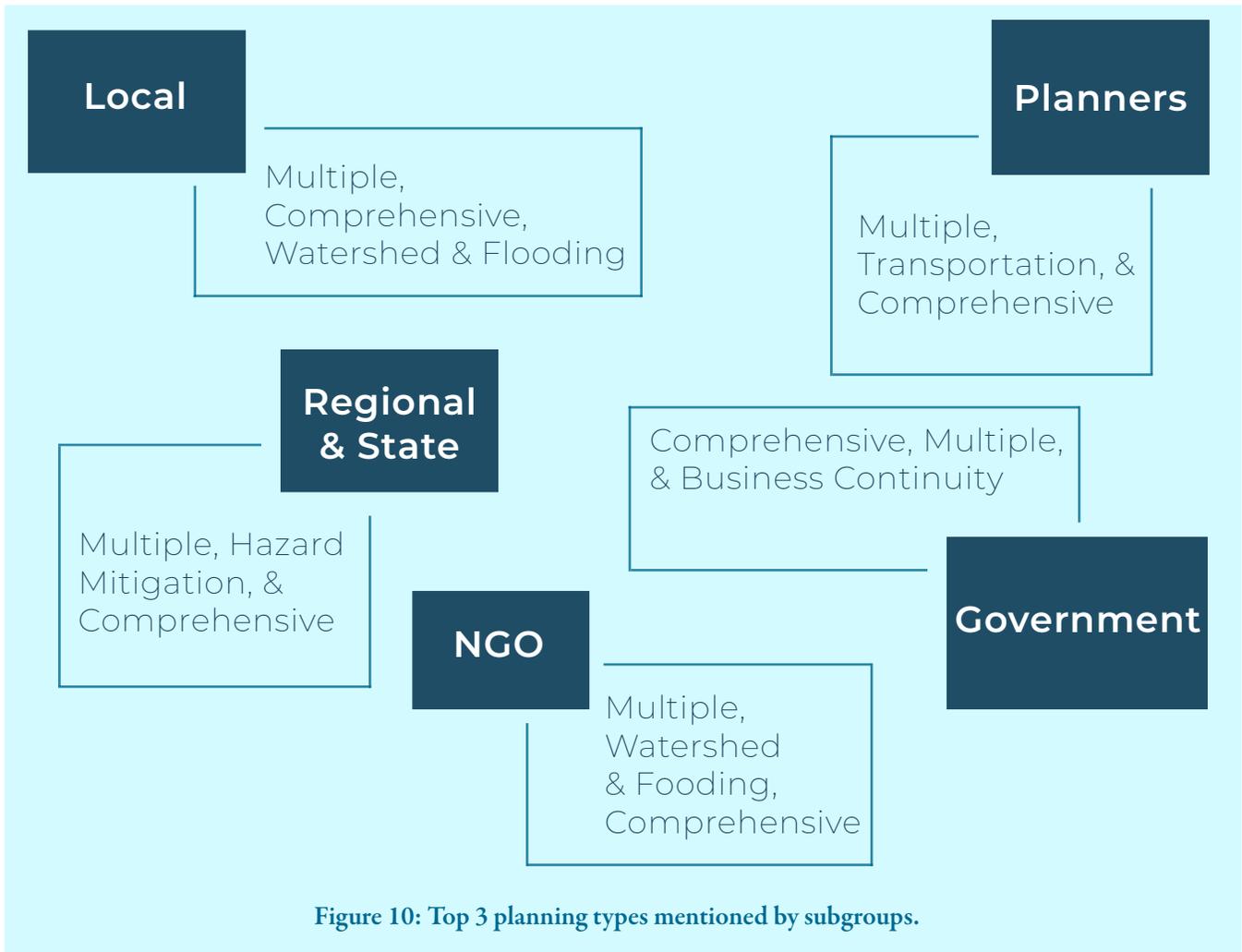
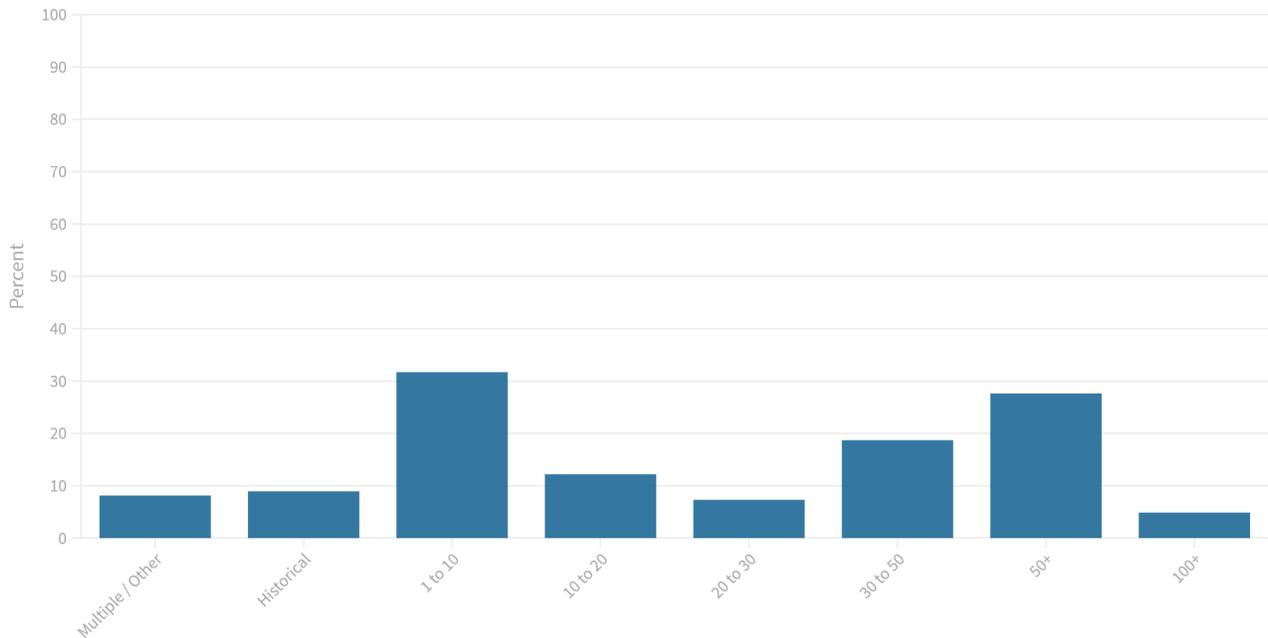


Figure 10: Top 3 planning types mentioned by subgroups.

Pulling from across the survey, the majority of respondents expressed a strong desire for action. Less detail was necessary for longer time scales, and across all time scales, information gathering and communication appeared to be inputs to and drivers of actions or decisions and not end goals in themselves. Local scale actors are strongly interested in fusing economics and climate impacts / trends, and are interested in networking to learn from others, funding, and finding model ordinances, case studies, or other “success stories” to model and learn from. Regional / state scale actors and some subgroups (especially planners and NGOs) are also interested in these topics, but have broader directions for actions. Larger scale actors and planners are especially interested in infrastructure, while NGOs seek to incorporate the environment and disadvantaged communities into the decision making process.

**For that planning process, how far into the future do you need climate trends information?**



Source: CISA Needs Assessment • N = 123

**Figure 11: Time horizons for climate information needed by respondents.**

## Conclusions

Many respondents expressed interest in receiving this summary of our findings, and we hope that this information is useful for your work. We welcome additional questions. Many also expressed interest in working with us, had questions, or requested further contact. You can expect us to reach out separately in the coming weeks, but don't hesitate to reach out in case we did not spot your request. CISA's contact options are available below. Thank you for answering this survey, and for assisting in mapping and identifying climate needs in the Carolinas.

## Contact Us

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