EVALUATING STAKEHOLDER ENGAGEMENT IN NORTH CAROLINA SEA GRANT’S STRATEGIC PLANNING PROCESS

by

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Executive Summary

Our client, North Carolina Sea Grant, is an inter-institutional program within the University of North Carolina system that facilitates coastal research, education, and outreach within the state. NC Sea Grant is currently determining its priorities and goals for inclusion in a strategic plan that will guide their allocation of time and resources for 2018-2021. The Executive Director of NC Sea Grant tasked our team with assessing stakeholder engagement within the organization’s ongoing strategic planning process, which we accomplished through internal interviews with staff, observation of focus groups organized by NC Sea Grant staff and conducted by a professional facilitator, and development of a 2016 strategic planning survey. This report identifies what we consider the strengths and challenges of NC Sea Grant’s approach to incorporating staff and stakeholder knowledge and opinions into the planning process.

Key findings from staff interviews included a lack of transparency in prior planning processes, the importance of stakeholder engagement, and the need to involve extension staff in the planning process. Follow up interviews with staff revealed the strengths of the staff and stakeholder focus groups, such as professional facilitation, as well as room for improvement such as better representation by stakeholders. Analysis of the stakeholder focus groups sessions revealed uneven participation among attendees and reaffirmed staff perception of less occupational diversity between invitees and attendees. Finally, a review of 29 past coast-focused surveys and the 2012 NC Sea Grant strategic planning survey helped inform the development of the 2016 survey instrument. Based on our assessment of the current planning process and key findings related to staff involvement, stakeholder feedback, and the creation of the survey, we developed the following set of recommendations for NC Sea Grant staff’s consideration during current and future strategic planning processes.

Staff Involvement Recommendations

1. Staff focus groups should continue to be incorporated into the strategic planning process, with potential additions / alterations including:
   a. Distribute summaries of the stakeholder focus groups prior to the staff focus group in order to increase staff preparedness and to better inform discussion.
   b. Provide specific topic areas to address during visioning exercises in order to cover as many different ideas for collaboration as possible.
   c. Facilitate follow-up discussions through meetings or conference calls.
2. Encourage early and consistent staff participation in drafting the final strategic plan—specifically, utilize expertise on topical areas and continue implementation of a writing team with extension and management staff representation.
3. Provide staff with a clear timeline for the strategic planning process and creation of the strategic plan, including opportunities for staff involvement.

Stakeholder Feedback Recommendations

1. Consider holding some stakeholder events outside of typical business hours at neutral
locations accessible to diverse sectors of the community, and avoiding scheduling near holidays. This may improve attendance rates and increase the diversity of sector representation.

2. Discuss ways to incorporate diversity into the strategic plan. This may include consideration of what NC Sea Grant’s definition of diversity should be when planning how to reach a broader constituency with their work, and whether there are any specific groups that staff hope to better serve in their outreach and research programs.

3. Distinguish between functional and topical priorities when soliciting feedback or guiding discussions of plan content.

4. In future focus groups, distribute brief follow-up surveys to all participants, as well as to invitees who did not attend. Staff can use these surveys to gain additional insight on the effectiveness of the focus groups, as well as to assess challenges that prevented stakeholders from attending.

5. In the future, consider holding one inland focus group specifically for academic stakeholders. This will allow NC Sea Grant to collect critical feedback from academic partners, while preventing them from dominating the conversation at the expense of other groups.

**Survey Recommendations**

1. Work with polling experts to determine the best sampling frame for the survey in its current format—online. However, if polling experts insist that the type of representation NC Sea Grant is looking for is not possible with an online survey, we suggest considering a mixed-methods approach using both mail and online surveys.

2. Consider assigning a staff member (or two) the responsibility of analyzing and summarizing survey data as soon as possible. It is important for whoever is responsible for those products to be involved with the survey for the rest of development and implementation.

3. Calculate or analyze the following data in order to successfully inform the strategic plan and general public and stakeholder engagement efforts.
   a. Response rate (overall survey and individual questions)
   b. Demographic data compared to intended sample frame
   c. Residency and zip code data compared to the priority issues under each focus areas.
   d. Residency, zip code, and occupation data compared to familiarity with NC Sea Grant and/or use of NC Sea Grant resources

4. Following the survey, produce a thorough survey report on the priority issues identified by the North Carolina public to help inform the strategic plan. In addition, we recommend the creation of a short summary that can be distributed to survey participants and interested stakeholders to strengthen the lines of communication with stakeholders and the general public.
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1. Introduction

Strategic planning is a systematic process that helps an organization set its priorities, define its future direction, and allocate resources to accomplish those priorities and direction (Mintzberg 2003). It is a way to formally produce decisions that “shape and guide what an organization is, what it does, and why it does it” (Bryson 1995, pg. 8).

Strategic planning was first embraced in the mid-1960s by corporations attempting to enhance the performance and competitiveness of different business units within their companies (Mintzberg 1994). Strategic planning was introduced to the public sector about 30 years ago, with most efforts initially focused on local government (Poister & Streib 2005). For both the public and private sectors, the purpose of strategic planning is to continue or increase the viability and effectiveness of an organization as well as to help an organization successfully respond to new situations and challenges (Bryson 1988).

While the details of the strategic planning process differ across sectors and between organizations, the most basic requirement is formalized discussions between key decision-makers about what is important for the future of the organization (Bryson 1988). However, the process also usually includes gathering data, information, and opinions in order to establish a long-term direction for the organization that translates to specific goals, objectives, actions, and decisions (Poister & Streib 2005). Over time, a commonly used template for strategic planning emerged from the approaches created by Bryson (1995), Nutt & Backoff (1992), and Koteen (1989), and it follows the process outlined by Figure 1 (Poister & Streib 2005).
The ultimate product of the strategic planning process is usually a strategic plan, a document designed to guide the organization’s activities and decisions for a specified period of time (Mittenthal & Klein 2002). A successful plan is relevant and useable and provides an effective way to implement the results of the planning process (Poister & Streib 2005). While a guiding document is an obvious benefit of the strategic planning process, there are other indirect benefits that an organization receives such as solving organizational problems, building teamwork, improving internal expertise, and bringing together employees who do not interact on a regular basis (Bryson 1988). Thus, the strategic planning process can help guide the organization going into the future as well as enhance the inner-workings of the organization.

*Figure 1. General strategic planning process according to Poister & Streib (2005).*
1.1 North Carolina Sea Grant and the Strategic Planning Process

Our client, North Carolina Sea Grant, is an inter-institutional program within the University of North Carolina system that is overseen by the National Sea Grant College Program. NC Sea Grant connects government funding to coastal research and education initiatives within the state. They bring scientists, decision makers, and communities together to facilitate a better understanding of the state’s diverse coastal ecosystems and issues. Their work is funded through a combination of state and federal dollars; state and regional Sea Grant offices facilitate distribution of funds from the National Oceanic and Atmospheric Administration (NOAA) to projects carried out by academics and organizations within their area.

NC Sea Grant is comprised of 24 staff based at four locations: a central office at North Carolina State University in Raleigh, NC and three extension offices located on the coast in Wilmington, Morehead City, and Manteo. Management staff are based in Raleigh. An organizational chart of staff roles and locations is included in Appendix A. At all four offices, NC Sea Grant employs staff specialists with expertise in a range of content areas including fisheries, economics, aquaculture, education, hazard adaptation, and erosion. Staff work closely with stakeholders and researchers in their local communities to facilitate research, outreach, and education, in addition to focusing on their topical specialty. For the purposes of this report, stakeholders are individuals or groups who either are directly engaged in or benefit from research, education, or outreach initiatives supported by North Carolina Sea Grant; while much of the organization’s engagement is with coastal residents and researchers, this also includes many inland residents and coastal visitors.

North Carolina Sea Grant staff function in three primary departments: research, education, and outreach. The research department funds projects to better understand and address coastal environmental concerns, and the education and outreach departments serve to connect the results of that research to stakeholders such as business owners, community leaders, and decision makers. Additionally, outreach/extension staff work to ensure that the wider public has access to information regarding coastal issues.

In order to continue receiving NOAA funding to support their operation and projects, each state or region’s Sea Grant program is required by the National Sea Grant office to complete a strategic plan every four years, typically aligned with the release of the National Strategic Plan. Examining how the NC Sea Grant program fits within the National Sea Grant...
program is important for determining regional goals. Coastal issues are multi-scalar and local, statewide, and national concerns must be addressed in the strategic plan. NC Sea Grant is currently undergoing a process of determining priorities for 2018-2021. Senior management staff at the Raleigh office are leading the strategic planning process. For this report, we worked most closely with Executive Director Susan White (our client) and Extension Director Jack Thigpen. Deputy Director John Fear, Communications Director Katie Mosher, Fiscal Officer Mary Beth Barrow, and the rest of the Sea Grant staff are also involved in the planning process to varying degrees.

For each 4-year plan, NC Sea Grant must determine a set of priority focus areas that will guide how it funds research, education, and outreach projects in the state. According to the 2014-2017 plan, these priority issues are “updated through input from:

- State, regional and federal resource management agencies;
- Faculty and staff of North Carolina public and private universities;
- The North Carolina Sea Grant Advisory Board;
- Professional, industry and community groups, as well as the public;
- Marine science panels convened within the University of North Carolina system;
- The National Sea Grant Strategic Plan that reflects plans developed by NOAA, and the NOAA Office of Oceanic and Atmospheric Research; and
- Federal, international, state and private foundation reports on ocean and coastal issues and policy, along with subsequent documents, including NOAA strategy papers on climate, weather and water, coasts, oceans and marine life.”

For this iteration of the planning process, NC Sea Grant staff have begun to implement a multi-stage process designed to increase stakeholder engagement and to better assess and serve the priorities of North Carolinians when determining these focus areas. Beginning in the fall of 2015, the office hosted a series of focus groups designed to formally collect input from stakeholders, as well as from staff and Advisory Board members. Staff also plan to distribute a survey in the coming months, designed to solicit feedback from a broader section of the public. This is an effort to improve on past strategic planning processes. Prior strategic planning processes did not specifically focus on stakeholder engagement. They either included Advisory Board and academic focus groups or a small survey distributed to partners and certain stakeholders. With the expansion of the current planning process, NC Sea Grant will gain a better understanding of stakeholder needs and priorities as well as encourage public participation in the strategic planning process.
1.2 Overview of Report

For this report, we will focus not on the content of the NC Sea Grant Strategic Plan, but on the process used by NC Sea Grant staff to engage stakeholders when determining focus areas and goals for inclusion in the plan. After speaking with our client and other staff, we determined that a top priority for those at NC Sea Grant is understanding the strengths and potential areas for improvement in the planning process, with a specific focus on improving stakeholder engagement. Through interviews with staff, observation of NC Sea Grant focus groups, and development of an improved survey instrument for public distribution, we aim to determine which parts of the planning process have thus far been strongest, note areas for continued improvement, and provide Sea Grant with tools to receive additional input from the broader public in this and future planning processes (Figure 2).

![Figure 2. Our evaluation process for NC Sea Grant’s Strategic Planning Process](image)

Staff interviews conducted by our research team, the focus groups convened by NC Sea Grant, and the survey instrument we developed are discussed and analyzed separately in the following three chapters. In each chapter, we discuss methods for analyzing parts of the strategic planning process, the results of our analysis, and the implications of those results. We bring the results from the three chapters together in the fifth and final chapter where we discuss our conclusions and recommendations for improving the NC Sea Grant strategic planning process.
2. Internal Interviews

2.1 Introduction
Success in meeting the goals of strategic planning, such as setting priorities and determining where to focus energy and resources, relies on engagement of staff and stakeholders in the process who are also committed to the planning mission (ECC 2016). Therefore, staff involvement should be emphasized in the strategic planning process. Moreover, extension staff can contribute unique knowledge concerning the needs and preferences of coastal communities due to their outreach and programming involving these communities. NC Sea Grant extension staff are located throughout the state in coastal areas, as well as metropolitan areas, providing different perspectives on coastal issues. In prior strategic planning processes, staff involvement was largely limited to management-level staff who do not consistently engage with coastal communities and are located in Raleigh, NC. Thus, extension staff members who interact more frequently with stakeholders can offer an advantageous perspective on stakeholders’ needs and priorities.

As NC Sea Grant staff have a diversity of strategic planning experience as well as distinct perspectives on coastal issues, we began the process of analyzing stakeholder engagement in the strategic planning process by conducting internal interviews with extension and management staff, to help guide our recommendations for effective stakeholder engagement.

2.2 Methods
Staff were chosen for the internal interviews based on our research of staff roles and recommendations from Susan White, Executive Director of NC Sea Grant. In order to gain a better understanding of stakeholder engagement in the strategic planning process, both staff who were heavily involved in past planning efforts as well as staff that were not typically involved in past planning efforts were interviewed. The following staff members of North Carolina Sea Grant were chosen for the initial round of internal interviews:

- Barbara Doll: Water Protection and Restoration Specialist, Raleigh
- Sara Mirabilio: Fisheries Specialist, Manteo
- John Fear: Deputy Director, Raleigh
- Katie Mosher: Communications Director, Raleigh
- Jack Thigpen: Extension Director, Raleigh
- Susan White: Executive Director, Raleigh
Barbara Doll and Sara Mirabilio are extension staff who do not directly participate in strategic plan development, but who play a large role in community interaction, so they were able to provide an outreach perspective for the strategic planning process, as well as comment on involvement of staff outside of the Raleigh office. We interviewed John Fear, Katie Mosher, Susan White, and Jack Thigpen, all management staff with a more direct role in the current and previous strategic planning processes.

The internal interview questions were developed by our team and reviewed by both our advisors and our client, Susan White. During each interview we asked the following questions:

**Internal Interview Questions**

1. How familiar are you with the North Carolina Sea Grant (NCSG) strategic planning process?
2. What is your role in the current strategic planning process (the 2018-2021 planning session)?
3. How many strategic plans have you worked on previously?
4. What was your role in each?
5. How would you describe the purpose of the NCSG strategic plan?
6. What are some of the strengths of the planning process?
7. What are some of the weaknesses of the planning process?
8. In what way do you think NCSG could improve these weaknesses?
9. What is the objective of involving stakeholders in the planning process?
10. How are specific stakeholders chosen?
11. Once these stakeholders are chosen, how would you describe their role in the strategic planning process?
12. How will the NCSG Strategic Plan help you in your job?
13. Do you have any final comments that you would like to add?

We conducted and recorded internal interviews over the phone during thirty-minute sessions, and then transcribed the results. Following the interview process, we reviewed and analyzed the internal interviews, drawing out key points, overlapping themes, other points of interest, and further questions. Synthesis of the analysis focused on identifying changes occurring within the planning process, the important role of staff perspective and involvement in the process of strategic planning, and the top priorities for stakeholder engagement. These interviews also provide an interesting comparison to conversations we held with staff in follow-up interviews after the completion of the focus groups; results from follow-up interviews are discussed in Chapter 3.
2.3 Results

The initial internal interview process yielded both pertinent discussion points as well as important actions items. Our analysis revealed three major themes including the importance of **strategic plan transparency**, **staff involvement** in the strategic planning process, and **stakeholder engagement**.

**Strategic Plan Transparency**

The role and involvement of extension staff in the strategic planning process was a theme that came up in a number of interviews. The strategic planning process has previously been limited to a small number of management staff located in Raleigh. Staff, primarily extension staff, felt that in prior years there was some level of inconsistency, confusion, or mystery regarding the process for staff not directly involved in the planning process. Extension staff described their participation and understanding of previous strategic planning processes as minimal and noted a lack of transparency in past processes. Following the focus groups there was positive feedback concerning the participation and inclusion of staff (discussed in Chapter 3), but prior to this year:

“Sea Grant would show the plan to us and ask staff for any final comments or input but it is not like they had even a focus session or led discussion amongst staff about what should be in that plan. Basically, we would view a draft version and they would ask ‘did we miss anything.’ Apparently that’s how it used to be, so I didn’t even know that much. So staff input was pretty minimal. I think what was more disappointing was that stakeholder input was missing.”

“It’s not like they were really doing a very good job and going out and talking to the constituency about what science they think would help them.”

“I’m fairly familiar with our strategic plan. I am definitely more familiar now with the new approach we’re taking than what we were previously taking. That was somewhat...some things were a little bit mysterious as to how they got it to the plan.”

**Staff Involvement**

Extension staff serve as a contact point for stakeholders. This connection makes extension staff involvement important in helping stakeholders articulate their priorities to NC Sea Grant. Staff involvement emerged as a constant theme and an opportunity for improvement in the strategic planning process.
“The extension staff, we are the ones going out and interacting with communities, we are the ones talking to the fishermen, the coastal residents, myself I work with the engineers or the homeowners that have shoreline erosion concerns or they have water quality concerns, we are out there we are hearing the concerns, we kind of have a pulse on what the issues really are.”

Due to the interaction between extension staff and the coastal communities, the ability of staff to become more involved in the strategic planning process would help address local stakeholder priorities. Fortunately, the 2018-2021 planning process has emphasized inclusion of extension staff more heavily in the strategic planning process through a staff focus group. Our interviews suggested that integration of staff members will more accurately identify community priorities, inform potential programs to meet needs, and create a rapport with members of a wider coastal community. This sentiment was articulated by an extension staff member:

“Because we were the only voice that constituents had, we were the only pulse of the coast. And I definitely feel like we were underutilized in our previous strategic planning process. Now that we are doing more focus groups and people can articulate themselves, I don’t feel the pressure as much to articulate on their behalf.”

Stakeholder Engagement

The complexity of environmental concerns that face the coast make it critical that public awareness and participation improve (Sayce et al. 2013). Interactions between public stakeholders and decision-makers have the potential to increase the validity of planning decisions as well as increase public support (Sayce et al. 2013). Throughout the interview process, it became evident that effectively involving stakeholders is a prominent goal of the current NC Sea Grant strategic planning process. One of the management staff highlighted the importance of:

“Trying to reach out to people that we may not know...because it’s easy to identify who your partners are and who you’ve worked well within the past, so certain community leaders and industry leaders you know these folks, but...what are we missing and how do we get those new voices in.”

NC Sea Grant chose to conduct focus groups as an initial method of engaging stakeholders. However, staff members had concerns that participation in the focus groups would be selective and therefore not entirely representative of NC Sea Grant stakeholders.
“So I think that is a very good step forward that they are going to do the focus group process. I think the challenge will be even though you do a good job of sending out invites to a very diverse audience both in gender and in race, and geography, and sort of field business field or whatever. You do a really good job of getting a diverse invite list together but still you may only have half the people show up. So the problem with that is you’re still going to have issues that are underrepresented during the focus group meeting. I know they plan to send out an electronic survey to a larger body of people which hopefully will fill in the cracks, but that to me is still yet to be seen on whether we are going to miss whole segments of the community.”

While most stakeholder engagement was directed towards fishers in the past, the current focus groups clearly aim to provide opportunities for additional stakeholder groups to be further involved.

“Fishermen know Sea Grant well, that has actually been one of the strongest areas, we have had the most staff historically on that, we only have a couple now but we have had as many as three or four people that have been working on fishery issues whether it’s marine, or estuarine fisheries so we’ve had a lot of expertise and we are known in that community, although it will not be uniform across all the audiences.”

However despite broader representation, staff noted that not all individuals they recommended were invited to participate in the focus groups. Increasing representation can continue to improve as education and outreach staff increase efforts to disseminate knowledge of NC Sea Grant. Engaging a larger range of stakeholders can further illuminate the priorities and objectives of NC Sea Grant stakeholders allowing for increased collaboration and research goals.

Beyond engagement in focus groups, staff identified several other ways to involve stakeholders in NC Sea Grant. One staff member suggested that recruiting specific stakeholders to serve on the NC Sea Grant Advisory Board would increase NC Sea Grant awareness in that person’s local community. One of the challenges of involving constituents in the strategic planning process is that not all are aware of NC Sea Grant or understand NC Sea Grant’s role and mission. One extension staff member suggested that for effective stakeholder engagement of both the focus groups and implementation of the survey: “there needs to be an accompanying education piece to kick the whole things off.” Additional background on NC Sea Grant’s role and mission would serve dual purposes of informing community members about NC Sea Grant,
and also giving stakeholders a new perspective on coastal issues and more context for which to suggest priorities for NC Sea Grant.

In prior strategic plans, NC Sea Grant has either conducted a survey or conducted focus groups, not both. Using these tools jointly will allow NC Sea Grant to collect a broader range of opinions and perceptions about coastal priorities. The internal interviews revealed that staff believe the combination of the survey instrument and the focus groups has the potential to be highly beneficial to overall stakeholder engagement.

“\(I\) think that \(w\)e \(d\)ecided the focus groups give you that chance for a conversation and a survey allows you to reach more people. So I think the idea that some years we have done one or the other, but that this \(y\)ear we are doing both is a \(w\)ay to make sure that we are reaching some of those audiences.”

Through both focus groups and the survey, NC Sea Grant seeks to open continued lines of communication with stakeholders.

“I would hope that those individuals, would, you know continue to be engaged with Sea Grant. And certainly what we’ll do as a requirement from our end is continue to engage them preferably beyond the strategic planning, because it’s a partnership opportunity and a learning opportunity for everyone.”

It is clear that the current attempts to engage stakeholders during the strategic planning process is viewed positively overall and combining the use of focus groups and a survey tool is a step forward. However, there is still room for improvement when interacting and engaging stakeholders in the planning process.

2.4 Discussion

The purpose of the initial internal interviews was to gauge staff perceptions on the efficacy of the strategic planning process and highlight opportunities for improvement. The initial interviews focused largely on stakeholder engagement and the role that the staff can play in improving this objective. Employing the focus groups and implementing a survey are both effective ways to further identify stakeholder concerns. Using these methods in tandem is believed to be an improvement on past efforts for stakeholder engagement in the strategic planning process. However, prior to attending the stakeholder focus groups, there was still a
concern that some stakeholder opinions, concerns, and priorities would be missed. Nevertheless, the diversity of staff position, location, previous strategic planning experience, and contact with the community did give us some insight into how to improve staff and stakeholder engagement in the strategic planning process. Recommendations and further comments on these issues are addressed in Chapter 3.

3. Focus Groups and Follow-up Interviews

3.1 Relevant Literature for Assessing Focus Group Process

Richard Krueger’s text on the subject of focus group process defines a focus group as: “a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, nonthreatening environment. It is conducted with approximately 7 to 10 people by a skilled interviewer. The discussion is comfortable and often enjoyable for participants as they share their ideas and perceptions. Group members influence each other by responding to ideas and comments in the discussion” (1994, pg. 6). NC Sea Grant management staff, led by Susan White, made the decision to prioritize incorporating stakeholder input into the strategic plan in an effort to improve on past strategic planning processes by better representing emerging needs and public priorities in the plan. Using an external facilitator to conduct focus groups was a new approach for the NC Sea Grant team, and one that staff praised throughout our conversations with them (see section 3.4). A review of stakeholder participation literature emphasizes that not only is excellent facilitation essential to reaching the desired outcomes of a focus group, but one author notes that it can be particularly important for groups discussing conservation and resource issues, which may be prone to conflict between stakeholder groups (Reed 2008). This is likely particularly important when bringing together a constituency like NC Sea Grant’s, which is composed of individuals in a wide range of sectors, often with potentially conflicting priorities and goals. While much of the focus group literature is oriented toward marketing and private sector applications, Krueger (1990) also notes that it is critical for universities and other public institutions to consider their clients’ point of view, and that they can greatly benefit from hearing about their services from a different perspective.

Much of the literature also notes that incorporating stakeholder input into planning and decision making processes as early as possible will strengthen outcomes (Chess and Purcell
1999, Reed 2008). NC Sea Grant staff expressed an interest in prioritizing stakeholder participation from the beginning of the planning process, and their choice to implement focus groups before writing a draft of the strategic plan aligns well with this recommendation. Krueger (1990) notes that focus groups allow planners in many different sectors to understand the point of view (and sometimes, “reality”) of those that they serve; undertaking this process shows that management staff understand this reality early in the process, which will allow NC Sea Grant to more efficiently conduct later stages of the planning process. Throughout our interviews with staff, many echoed this sentiment when discussing the effectiveness of the current process (see section 3.4).

Recruitment of participants is also a critical part of an effective focus group process, and one that does not always receive the same attention as facilitation and analysis of results (Krueger 1990). Generally, homogeneity of groups should be a guiding principle, though homogeneity can be defined in different ways depending on the needs of the process (Krueger 1990, Morgan 1997). In this case, groups recruited for the strategic planning focus groups were homogenous in terms of participants’ geographic location, but were mixed in terms of their professional roles and relationship to NC Sea Grant (see section 3.4.3). The literature typically recommends groups of no more than twelve participants, with six to nine individuals being ideal (Krueger 1990). In larger groups or groups with very knowledgeable participants, all individuals may not be able to fully contribute. Krueger (1990) notes that one way to identify that a group is too large is when individuals begin whispering among themselves to share ideas or concerns.

There are also additional challenges associated with focus groups conducted with a pre-existing group; in the case of NC Sea Grant, the Advisory Board, staff members, or stakeholders who are already familiar with each other. Pre-existing relationships can result in participants expressing themselves differently due to superior-subordinate dynamics or their knowledge of others’ opinions. These groups may be highly engaged and have conversations easily, but interpreting their results or comparing across groups becomes more difficult (Krueger 1990).

Though literature on focus group methods and applications provides general resources related to this process, a 2002 article by Higa-Moore et al. provides a more specific parallel to the process currently being undertaken by NC Sea Grant. The authors note how they moved beyond the typical purpose of focus groups within a library setting, which have traditionally been used to assess general patron satisfaction and use trends, and instead used this research format as
part of the long-term strategic planning process within a nonprofit institution. The authors point out that the benefits of this type of approach are not limited to the data it can provide, noting that “the opportunity for us to interact with our patrons and gather needed input, while also promoting our planning efforts and the library in general, turned out to be a winning combination” (Higa-Moore et al. 2002, pg. 88). This approach serves the dual purposes of assessing stakeholder’s personal priorities for the drafting of a plan, and building connections and enhancing visibility of NC Sea Grant’s work.

Despite differences in the mission of the library discussed in this article and NC Sea Grant, the results of this group’s findings related to staff involvement in focus groups is of particular value to our client’s process:

“Focus group data provided staff with a direct link to our patrons’ vision of a desired future library. The patron feedback also provided us with a benchmark to compare to the staff’s vision. We were gratified that the visions of both library staff and patrons agreed. By validating the staff’s perceptions of patrons’ wants and needs, staff became energized and eager to start the specifics of the long-term planning process” (Higa-Moore et al. 2002, pg. 90).

The authors articulate one of the greatest potential benefits of approaching strategic planning from this perspective: not just the opportunity to hear from the community, but the opportunity to create investment among staff in a final product which will ultimately guide their work for the next four years. By involving staff in the stakeholder engagement process as well as facilitating an internal focus group in addition to the community-oriented sessions, the management team at NC Sea Grant has demonstrated an effort to enable the staff to have a voice in the process and share their expertise and opinions with the planning team. We discussed the effectiveness of this approach with staff through brief follow-up interviews after the completion of all the focus groups (see section 3.4).

3.2 Focus Group Process

Seven focus groups were organized by NC Sea Grant staff and facilitated by Warren Miller from Fountainworks. Interviewed staff agreed that the decisions to hold these focus groups and hire a professional facilitator were excellent steps in ensuring a broader base of input for the strategic plan. The sessions provided an opportunity to receive detailed feedback on NC
Sea Grant priorities from a number of individuals in a fairly short time span. However, through our observation of five of these meetings, we identified areas of potential improvement for future focus groups coordinated by NC Sea Grant staff, as well as for other efforts geared toward incorporating staff expertise and user group insight into the strategic planning process and final priority areas for the plan.

Five focus groups were conducted for members of the public and representatives of key interest groups. Two were held in Raleigh (December 7th and 8th, 2015), one in Morehead City (December 9th, 2015), one in Wilmington (December 14, 2015), and one in Skyco near Manteo (December 16, 2015). Staff designed these meetings to cover the full geographic area served by NC Sea Grant, allowing staff and stakeholders from the various regions of the state to participate. Senior staff from the Raleigh office attended all events, and some extension staff representatives from the field offices in Wilmington, Morehead City, and Manteo also observed. As discussed by several staff during internal interviews, suggestions for participants were solicited from NC Sea Grant extension and central office staff, and invitations were extended by senior leadership at the central office. Our team attended the first three community sessions in person, though we were unable to attend focus groups held in Wilmington and Skyco due to scheduling issues.

For these five meetings, staff and our team were not active participants in the process, instead we were merely observers. At each session, staff provided an introduction to NC Sea Grant aimed at those participants who were less familiar with the organization’s structure and missions, and described the purpose of the strategic plan. In this overview, staff emphasized NC Sea Grant’s role in connecting user groups and researchers through the exchange of research ideas and findings. As an introduction to the idea of assessing NC Sea Grant’s priorities for the coming years, at some of the meetings, staff also stressed the changing coastal contexts facing North Carolina: shifts in demographics, economics, and physical landscapes that have the potential to play a critical role in how NC Sea Grant does its work and supports the efforts of its partners. Each participant also introduced themselves and their affiliation.

The central question of each session was “What are the most important issues for North Carolina Sea Grant to concentrate their research and outreach efforts on over the next four years?” For the first portion of the meeting, participants were asked to independently write down answers to this question. The facilitator then went around the room, inviting everyone to
contribute their ideas one at a time. If individuals had issues that they believed were very similar to those being expressed by another participant, they were invited to add it to the board and explain why they felt there was significant overlap. Once all individual ideas were contributed, the facilitator created preliminary groupings of issues under larger umbrella topics, and then invited the group to discuss how ideas could be better sorted into larger priority issues. After a break, the facilitator then conducted a topic ranking exercise using an anonymous voting system. Participants were asked to vote on the importance of each of the larger groupings of issues that were identified previously, and then were invited to discuss why they thought certain topics were higher priority.

Two additional focus groups were also conducted in Raleigh, one for NC Sea Grant Advisory Board members (January 19, 2016) and one for Sea Grant staff from the central and field offices (February 3, 2016). The NC Sea Grant Advisory Board consists of partners and stakeholders representing government agencies, non-profit organizations, and private industry. While they represent some of the same sectors as individuals invited to community focus groups, these individuals have a much higher level of involvement and familiarity with NC Sea Grant. Each of these groups completed the same issue identification exercises, but with a few additional steps and conversations. The Advisory Board session focused on providing feedback about criteria for selection of final focus areas, while the staff session began with an opportunity for participants to learn about the issues identified in the previous six meetings, and to provide their perspective on gaps or concerns related to those issue areas. They focused particularly on the results from the Advisory Board session, but also were given an overview of the results from the regional stakeholder meetings before starting their discussion. After discussing topical areas, the staff also completed a visioning exercise in which they brainstormed actionable steps for using NC Sea Grant’s resources within one focus area of their choosing. This was designed to mirror the process of writing the plan, which a group of staff will be undertaking in the coming months.

3.3 Follow-up Interviews

After the staff focus group, we conducted short follow-up interviews with 11 extension staff. We designed these interviews to elicit opinions from staff on the effectiveness of both the regional stakeholder focus groups, as well as the staff focus group. During each 15-minute interview, we asked the following questions. If staff were not present at any of the regional
stakeholder focus groups (which many were not), we focused primarily on the latter three questions regarding the staff event.

**Follow-up Interview Questions**

*Part A: Stakeholder focus groups (for staff who attended one or more)*

1) *What were the most effective aspects of the focus group? Were there any highlights?*
2) *Do you have any suggestions for how to improve future stakeholder engagement activities?*
3) *Do you think the participants were representative of the community? North Carolina Sea Grant stakeholders in general?*

*Part B: Staff focus group (for all interviewees)*

4) *Do you think the staff focus group was an effective way to incorporate staff opinions and knowledge in the strategic planning process?*
5) *Do you have any suggestions for how to improve future staff involvement in the strategic planning process?*
6) *Do you have any other comments or general impressions you would like to share?*

**3.4 Results**

Our team used a combination of focus group results from the facilitator, lists of focus group invitees and attendees, and follow-up interviews to assess the effectiveness of these meetings and identify gaps and areas for potential continued improvement in the process. Fountainworks and facilitator Warren Miller provided NC Sea Grant and our team with a report including results from all stakeholder focus groups, as well as the Advisory Board and staff focus groups. These results describe top focus areas that participants identified as priorities, both overall and by location and sector affiliation (government, private business, nonprofit, etc.) The Fountainworks report identified the following six top priority areas based on input from the five stakeholder meetings, which they note were consistently discussed throughout most focus groups:

- Public Education/Outreach
- Water Quality Issues/Stormwater
- Coastal Development
- Aquaculture
- Resiliency
- Land Use Planning
We used this results report to guide some of our choices in creating a survey instrument for distribution (see Chapter 4). However, this chapter’s assessment of the focus groups more closely examines the process of organizing and conducting the sessions, rather than the content areas identified by the facilitator and staff at Fountainworks, as a thorough report on those topics has already been provided to NC Sea Grant.

3.4.1 Follow-up Interview Results: Staff Focus Group

Follow-up interviews with extension staff highlight some perceived strengths and challenges of staff involvement in the strategic planning process, and also provide some suggestions from staff of ways to improve current and future strategic planning processes. Through an assessment of key themes from interview responses and comparisons to the initial internal interviews, we examined the focus group process from our own perspective as well as that of the staff.

During these interviews, some extension staff mentioned that overall transparency in the strategic planning process was being improved upon. Staff commented that both stakeholder and staff focus groups increase the efficacy of stakeholder engagement and demonstrated that management staff are making strides to include staff in the process of the strategic plan through the use of focus groups.

“I think that it is good that the development of the strategic plan is not happening in a vacuum, it’s not happening in a black box. That our stakeholders are having a chance to provide input, that we are having a chance to provide input and it’s all very open, it’s professionally facilitated.”

Eight out of the eleven interviewees stated that they believed the staff focus group was overall an effective method of incorporating staff opinions and knowledge into the strategic plan. There was an overwhelmingly sentiment that staff appreciated senior leadership seeking their input and arranging a formalized activity to elicit ideas and contributions. In both the initial and follow-up interviews, staff also praised the decision to bring in a professional facilitator for the focus groups. Staff felt that the facilitator, Warren Miller from Fountainworks, did a good job of guiding the focus group sessions.
“I really liked having the external facilitator. I think that was a great call. I’ve seen Warren facilitate before, a long time ago like five years ago, so yeah I think that turned out really well.”

“I really liked that there was a separate facilitator that was running the show and I thought the person they hired did a good job.”

Every staff member who specifically mentioned the facilitator gave positive feedback following the focus groups. However, a few staff members did acknowledge that extra resources are needed to hire an outside facilitator. Several interviewees also noted that they felt they could not comment fully on the overall success of the focus group until they have seen a draft of the plan. After seeing the plan, they thought they would have a better understanding of how much staff input was used in the writing process.

“I could say that it’s been entirely effective and then we get the ultimate plan and then we see very little of the staff planning actually reflected in what the plan is. In which case, no it would not have been effective. If we did participate and that particular outcome comes together and that is the plan to which we were held and evaluated, then yes, but I don’t really feel like I can answer that question.”

Staff suggested numerous and diverse ways to improve future focus groups and better integrate staff knowledge into the planning process, but a few ideas were shared by several interviewees. Several staff noted that they enjoyed the visioning exercise conducted at the end of the focus group and found it helpful to engage in a brainstorming and logic model process with their colleagues. The exercise was introduced to the group not as a way to develop specific information for the plan, but rather to demonstrate the type of thought process that will occur within the writing team. However, five interviewees expressed concern that this exercise either felt rushed or not as productive or valuable as it could have been.

“On the one hand, it was a good team-building exercise, making us pool our input together with each other. On the other hand, long-term, am I ever going to come back to that exercise, is that ever actually going to be implemented? I don’t know…It’s kind of alright, so design a project great, do we have the resources, do we have the manpower, do we have the willpower to do it? … Or is it just sort of getting filed in a file somewhere? But the team building aspect and getting to think about it is valuable. So I guess I would kind of run down on the neutral.”
“When the day was done, I thought to myself that I think the first chart with topic areas that we should be working in and stuff was more useful to staff than the second half of the day when we were brainstorming specific priorities and projects, you know trying to say what’s low hanging fruit. We decided that the second part of the day was more useful to management but not for staff. So for us, for developing our plans of work and what we are actually going to do and where we should be focusing our efforts, the first part of the day and that chart [of Advisory Board and stakeholder focus group results] was especially useful, the second part of the day was of no use.”

Six individuals specifically discussed how nearly all the groups for the exercise, which were randomly formed rather than grouped by participant expertise, chose an education-focused topic to discuss and develop action items for.

“Since none of the groups had picked a particular topic or were assigned a particular topic, we all ended up doing somewhat similar and overlapping topics. So we managed to get a lot of input on incorporating more student input and incorporating more career development and less of some of the big issues that need to be addressed long-term. So I think more direction in that exercise would’ve made it more useful and we would’ve covered more ground.”

Some felt there was more potential in this exercise, and at least one staff member suggested that the focus group might have been more effective spread out over two days, so more time could be dedicated to this activity. Others suggested that more direction by management staff over which topical areas each group worked on might have provided a better breadth of ideas and challenged people to think about more diverse and actionable items.

During the staff focus group, participants briefly discussed results of previous focus groups at the session, with an emphasis on the Advisory Board results and some mention of the stakeholder results. The facilitator then asked staff to address whether they felt these results were comprehensive. During our follow-up interviews, several staff suggested that they would have preferred to receive more information about the stakeholder focus group results in advance, or to discuss them for longer during the staff focus group. Three interviewees noted that it would have been beneficial to give them an opportunity to think about these ideas before meeting with all of the staff. While this would have been a different format from the approach used in the other focus groups, one staff member explained that in his opinion giving out more information in advance would have increased the efficiency and efficacy of the staff session.
“It was well organized … but it would allow people to think more in depth than when you are on the spot. You know when it’s your time to talk in a meeting you might forget a few points you want to make. This would allow folks to have everything organized prior to the staff meeting. So when you go around people already have ideas written down in front of you there. Something like that would probably be helpful. … I think maybe send out an email with details, you know summarizing the findings from the focus groups along the coast and in Raleigh, like for those – I didn’t attend the one in [Raleigh], I didn’t attend the one in Manteo, so that would be good for all the staff to have that, in front of them.”

A handout with an executive summary of the regional stakeholder focus group results was distributed at the Advisory Board session, but not at the staff session. In addition to discussing a preference for more information in advance, three staff also emphasized the importance of collecting written feedback and supporting ongoing involvement of staff in the strategic planning process. The management team has invited staff to participate in writing the plan, and at least one of the staff we interviewed has chosen to do so.

3.4.2 Staff Involvement Recommendations

Although analyzing and providing recommendations for staff involvement in the strategic planning process was not part of our original plan, it was a topic that came up often in the initial and follow up interviews as a weakness of previous planning processes. Management staff are already addressing this weakness through inclusion of a staff focus group designed to elicit their input on the planning process, and by inviting staff to be on the plan writing team. Below we list a few additional recommendations that should continue the trajectory of improving staff involvement in the strategic planning process.

1. Staff focus groups should continue to be incorporated into the strategic planning process with a few improvements.

Feedback from staff members about the staff focus group during the follow-up interviews was favorable. They noted that this approach brought staff together, encouraged teamwork, and promoted important discussions concerning priority areas for NC Sea Grant. However, staff did recognize some areas for improvement, therefore we recommend three changes to ensure this method is as effective for NC Sea Grant as possible. First, we recommend distributing
summaries of the stakeholder focus groups prior to the staff focus group in order to increase staff preparedness and to better inform discussion. Secondly, we recommend providing direction to staff about specific topic areas to address during breakout sessions and visioning exercises in order to cover as many different issues and ideas for collaboration as possible. Groups can be assigned topic areas based on staff expertise or their ability to inform potential projects and programs. Finally, we suggest facilitating follow-up discussions through meetings or conference calls about staff and stakeholder focus group results throughout the drafting of the strategic plan to ensure priority issues are adequately addressed and to encourage continued staff involvement.

2. **Encourage early and consistent staff participation when drafting the strategic plan.**
   Based on staff knowledge and experience, it would be advantageous to utilize specific expertise on topical areas in the drafting process. This can be accomplished through creation of a writing team with representation from extension and management staff, which is a method that NC Sea Grant is beginning to implement. Additionally, staff with topical expertise should be consulted on the sections of the plan that relate to their specific focus area to ensure that nothing important is overlooked or missed.

3. **Provide staff with a clear timeline for the strategic planning process and the creation of the strategic plan, including opportunities for staff involvement.**
   A concern of staff with former strategic planning processes was that they had little understanding of what, when, and how the plan was formed. There have been considerable improvements in the 2018-2021 planning process, including more transparency with the overall process. We recommend continuing this trend through the final stages of the drafting process as well as in future strategic planning processes by creating a timeline to increase transparency for staff. Besides increasing transparency, this timeline should provide clear opportunities for staff involvement throughout the strategic planning process.

3.4.3 **Follow-up Interview Results: Stakeholder Focus Groups**
   In addition to asking about staff involvement in the planning process, follow-up interviews also asked staff about the strengths and challenges of the regional stakeholder focus groups, suggestions for improving stakeholder engagement, and overall impressions.
Stakeholder Focus Groups

Not all interviewed staff attended a stakeholder group, or felt they knew enough about the sessions to assess the representativeness of participants. Of those who did share their opinions about these meetings, four felt that the meeting they attended represented their community and NC Sea Grant stakeholders well. Several made comments indicating that they understood the cost and logistical support needed to make these meetings happen, and appreciated the commitment of the leadership team to improve upon past processes. But three of these respondents as well as an additional fourth interviewee noted that there is still room for improvement in representation at these and other similar meetings designed to elicit stakeholder feedback.

One topic that arose in five interviews was the issue of which community members were invited to attend the meetings, and how that compared to who actually attended. Several staff felt that the groups who attended were less diverse and representative of their constituencies than they might have been had there been a higher attendance rate. Some people noted particular groups that were not ultimately represented at some of the meetings, such as shellfish growers’ associations or recreational fishers. Staff were unsure why this was the case, but two people noted that timing may have been one factor.

“It just looked like there was a lot of duplication of certain groups and then no representation from other groups. And I don’t know...there were a lot of people that were invited... So I don’t know if it’s a function of this area. It’s so geographically spread out and it happened during the week. I can’t remember how many fishermen, but if a fisherman doesn’t fish he isn’t going to make any money. And if he lives down in, you know, Ocracoke, he may have to come up the night before and spend his own money to attend or come late or whatever... and I know I remember the invite list was from 10 counties up here and we’re like 3 hours from some of our constituents. So to invite them to a daylong meeting at their own expense, I mean we gave them lunch but I don’t think anybody was offered mileage or anything else. I don’t know if that makes a difference or if it was the day of the week, or if it was the time of the year, you know ours was in mid-December.”

“So I mean in some ways we didn’t want a mess of people there but I think what is disappointing is that several people just didn’t show or dropped out last minute because they had a conflict and so our numbers were really low. I think compared to what it looked like based on registration, I think there were you know some people had
legitimate conflicts but I just don’t know because they didn’t show. So I don’t think it was really reflective.”

“I do think winter is a good time to get up with stakeholders, but maybe it would’ve been better instead of kind of sandwiching them between Thanksgiving and Christmas to just wait until the holidays are past and let’s just do this in January when people are keying to go to a meeting because they have nothing else going on. And I’m sure that it was just the timing of everything, but I think that maybe a little bit why our attendance was down too.”

One interviewee noted that at the regional session she attended, she felt that there was unequal participation within the group. She described how “there was one classroom teacher and she was the only female and the only teacher. And she talked to me later and said she really didn’t feel like she had much to offer. I think it would’ve helped to have either another teacher so she could have somebody to talk to. She just kind of sat there and listened.” Our team noticed some similar behavior from individuals at other focus groups, particularly at the inland meetings. While we felt the moderator did an excellent job of involving participants in the discussion (an opinion shared by several staff during their interviews), we observed that some individuals commented less frequently on others’ ideas, and only contributed when asked directly.

Focus Areas

Prior to the focus groups, staff feedback during internal interviews did not focus specifically on the priority areas for allocation of resources within the strategic plan. In the follow-up interviews, priority issue areas that emerged during the focus groups were often mentioned by staff, specifically aquaculture, water quality, resiliency and land use planning. There was specific emphasis on the attention that was given to aquaculture and water quality.

“Well I think the mention of aquaculture, as one of the primary topics that was discussed made it seem like there was a lot of interest. There was a little bit of opposition there about the experience of aquaculture, but by and large it was pretty positive I think. As far as, you know identifying needs people are interested in expanding it, you know sustainable practice. That was pretty nice.”

“I think, interestingly, people sort of had a consensus on some issues. I mean not that you’re trying to get consensus in a strategic plan, but you know it’s always interesting to me when you see different stakeholder groups coming together and all of sudden they can
agree on what a major coastal issue is. They were talking a lot about water quality, they were talking a lot about shifting sands and what that means for habitat and economy.”

“It seemed like such a big bulk of what they talked about was water quality, which was really striking to me, I expected a little more diversity, there were several issues I guess but water quality was such a powerhouse, it’s kind of good, it’s like yeah I’m working in the right area but we need more people working on this. That was the most the thing that stood out to me, there was no big surprise things listed. There was nothing that was like oh wow, hadn't thought of that. The frequency of water quality stuff was really pronounced.”

Due to stakeholder focus on water quality and aquaculture and the reaction of staff members to that focus, those topics should be taken into consideration when assessing priority areas.

3.4.4 Analysis of Invitees and Participants

We categorized participants and all individuals who were invited to attend based on their primary affiliation as provided by NC Sea Grant, though we understand that many participants are active members of their communities and may have ties to multiple sectors and focus areas not described on official registration lists. However, we described attendees and invitees as associated with one of the following: non-profits, state government, local government, federal government, private sector, trade associations, media, and academia. Table 1 lists attendance rates as well as numbers of invitees and attendees for each location and sector.
Table 1: Attendance at stakeholder focus groups. Attendance rate is defined as the percentage of invited community members who participated in their region’s focus group. Note that overall attendance rates by location also include several invited participants who had no identified affiliation on lists provided by NC Sea Grant.

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<td>N/A 100.0% 100.0% 0.0% 33.3% 40.0% 33.3%</td>
</tr>
<tr>
<td>Invited</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Attendance rate</td>
<td>N/A</td>
<td>100.0%</td>
<td>100.0%</td>
<td>0.0%</td>
<td>33.3%</td>
<td>40.0%</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MEDIA</th>
<th>Inland 1</th>
<th>Inland 2</th>
<th>Inland Total</th>
<th>Skyco/ Manteo</th>
<th>Morehead City</th>
<th>Wilmington</th>
<th>OVERALL ATTENDANCE RATE BY GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0.0% N/A 0.0% 100.0% N/A 25.0%</td>
</tr>
<tr>
<td>Invited</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Attendance rate</td>
<td>0.0%</td>
<td>N/A</td>
<td>0.0%</td>
<td>100.0%</td>
<td>N/A</td>
<td>25.0%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OVERALL ATTENDANCE RATE BY LOCATION</th>
<th>Skyco/ Manteo</th>
<th>Morehead City</th>
<th>Wilmington</th>
<th>OVERALL ATTENDANCE RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.6%</td>
<td>42.9%</td>
<td>35.7%</td>
<td>32.4%</td>
<td>40.0%</td>
</tr>
</tbody>
</table>

These categorizations are slightly different than those used by the facilitator when participants were asked to self-identify during a stakeholder focus group exercise. During at least two of the focus groups, when asked to identify with a group as part of a ranking exercise, individuals asked questions that demonstrated some confusion about how to fit themselves into one of the categories provided by the facilitator (private business, local government, state government, federal government, academic, nonprofit, other). Based on this as well as our assessment of the list of professional affiliations provided by NC Sea Grant, we added several
additional categories. This allows us to more clearly understand attendance rates of certain groups, and the diversity of affiliations of individuals invited to participate in comparison to those who actually attended. In particular, we chose the category of “trade associations” to represent participants who represent an organization whose mission is to further the cause of a particular industry. These associations are often non-profits, but also promote the specific business interests of a certain group, so they were given their own category rather than being included as nonprofit or private.

Because focus group conversations were affected not only by who attended, but also by who attended on the same day and how they interacted with each other, we also analyzed representation by sector at each meeting. Figure 3 shows the breakdown of sector representation in each regional focus group, both for invitees and attendees. This figure supports the perception of several staff that the community members who attended the focus groups represented less diverse interests than the full list of those who were invited.

![Figure 3: Percentage of focus group invitees and attendees affiliated with various sectors. For each meeting location, the outer circle represents those who attended, and the inner circle those who were invited.](image-url)
Figure 3: Percentage of focus group invitees and attendees affiliated with various sectors. For each meeting location, the outer circle represents those who attended, and the inner circle those who were invited.
The Fountainworks report notes that many of the same priorities were discussed across regions and professional affiliations. However, there are some differences in attendance and participation in the five sessions, examined here by location.

**Inland**: Attendance at the two inland sessions was quite different. While 35 participants were invited to each, 10 people participated the first day and 15 the second. The second day was heavily skewed toward academia, with more than half of the group representing research and university interests. There is undoubtedly a stronger academic presence in this region than on the coast, and this day was likely the best opportunity for many of NC Sea Grant’s important inland research partners to participate. Possibly as a result, the conversation at the second meeting took some different directions than at other sessions. Our team observed that the non-university affiliated participants in this group provided fewer topic suggestions in the initial brainstorming exercise (2-3) than the academic representatives (all of whom contributed 4-8). Overall, the non-university stakeholders provided about one third of the initial topics despite being nearly half the group. During a voting exercise where participants ranked the priorities they had discussed earlier in the session, this was also the only focus group that chose “sustainability” as a top priority, with 7 participants voting for it. A third of the group also voted for resiliency; our notes from this session reflect the fact that the phrase “climate change” was used more frequently than in the other sessions we observed.

**Morehead City (Central Coast region)**: Of the four areas, the central coast had the highest percentage of invitees attend. It also had the most categories of affiliation represented in its attendees; representatives of all categories except for local government participated. Participant affiliations for this focus group are fairly similar to the diversity of affiliations invited to attend. This session was also the only one to be held at a privately owned location, a local restaurant owned by a NC Sea Grant partner who donated use of the space. It is interesting to note that during a follow-up interview with Chuck Weirich, a NC Sea Grant extension specialist who attended this meeting, he discussed an impression that this group had focused much of the discussion on aquaculture, which he was glad to see. However, while the Fountainworks report shows that during the initial brainstorming exercise aquaculture topics were proposed more often than any topic except for education (which also included several ideas about aquaculture education), voting results during this session do not entirely reflect the same focus. After voting, aquaculture was not one of the group’s top priorities. This reflects some of the difficulty
presented by overlapping focus areas and the challenges of thoroughly eliciting and representing stakeholder priorities through this type of priority ranking exercise alone.

**Wilmington (South Coast region):** While this focus group had the lowest overall attendance rate of its invitees (13 out of 47 or 27.7%), the affiliations of its attendees also closely mirrored the overall diversity of those that were invited to attend. Based on this, it seems that for this region’s focus group, a low attendance rate did not negatively affect the overall distribution of affiliation that staff aimed for when inviting community members. The greatest number of individuals were also invited to Wilmington out of the five meetings. Our team did not attend the meetings in Wilmington or Skyco, so we have fewer observations to share about these sessions beyond what was discussed in staff interviews and the data displayed in Table 1 and Figures 1-7.

**Skyco/Manteo (North Coast region):** This focus group was the smallest of those held in the coastal areas. As noted in a follow-up staff interview, this region is also the most remote and covers a large geographical area, requiring significant travel for some constituents to get to the area. 28 individuals were invited, and this meeting had a 32.4% attendance rate.

### 3.4.5 Additional Observational Results

Throughout several of the focus groups, recurring questions from participants and discussions centering around the issue identification process revealed potential areas for improvement. In particular, our team noted repeated confusion over whether feedback should be focused on topic areas or functional ideas and methods. For example, if a participant felt that public understanding of climate change was a critical issue, should they express this as a focus on funding projects related to climate change, or on educating the general public? One staff member noted,

“Some of them are topic areas whereas some of them are action items. Facilitating and convening that’s kind of an action that cross-cuts everything that we do and in context of what topic areas that we’re doing, so kind of wondering if maybe that became a factor. Seeing the voting results was helpful in getting me to think about that.”

Both management staff and the facilitator encouraged stakeholders to make their own interpretation of the central question and to express their ideas from either viewpoint, which we expect was beneficial in terms of not suppressing input and allowing individuals to express what
they feel is most important. However, this confusion may be problematic in terms of how participants voted in the ranking exercises and understood the priorities being discussed, as well as how easily results can be compared across focus groups.

Our team also assessed overall gender diversity in the groups after we felt that we had noticed unequal contributions in at least one focus group from men and women. Table 2 summarizes these results. Several of the groups were dominated by male attendees. In Skyco and for the second Inland focus group, participants closely reflected the gender diversity of invited community members. In Wilmington and for the first Inland focus group, a lower percentage of invited women attended, whereas in Morehead City, the opposite was the case.

At the second Inland meeting, of the 72 initial topics proposed during the brainstorming exercise, approximately 30% of them were provided by the female stakeholders, which is roughly the percentage of the participants who were women. However, we noted fewer contributions from female participants after the initial brainstorming exercise, when the group discussed grouping priorities and reasoning for ranking priorities—this may also have been related to other factors including professional backgrounds and a few particularly vocal participants. Some of the literature regarding focus groups notes that the ideal group size is between six and nine, and that groups larger than 12 can limit some participants’ ability to contribute their ideas fully (Krueger 1990). Several of the NC Sea Grant focus groups had groups at the upper end of this range, or exceeding 12 participants; this may have also influenced whether individuals contributed equally.
Table 2: Gender distribution of focus group invitees and participants.

<table>
<thead>
<tr>
<th></th>
<th>% Female Invitees</th>
<th>% Female Participants</th>
<th>% Male Invitees</th>
<th>% Male Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inland 1</td>
<td>41%</td>
<td>30%</td>
<td>59%</td>
<td>70%</td>
</tr>
<tr>
<td>Inland 2</td>
<td>31%</td>
<td>33%</td>
<td>69%</td>
<td>67%</td>
</tr>
<tr>
<td>Wilmington</td>
<td>33%</td>
<td>21%</td>
<td>67%</td>
<td>79%</td>
</tr>
<tr>
<td>Morehead City</td>
<td>32%</td>
<td>43%</td>
<td>68%</td>
<td>57%</td>
</tr>
<tr>
<td>Skyco/Manteo</td>
<td>20%</td>
<td>20%</td>
<td>80%</td>
<td>80%</td>
</tr>
</tbody>
</table>

3.5 Discussion and Recommendations

Based on our analysis of participants who were invited to and ultimately joined the focus groups, it appears that while NC Sea Grant made a concerted effort to include a diverse range of stakeholders and coastal leaders, additional progress could be made in this regard. In addition to our personal observations, the diversity of stakeholders that NC Sea Grant interacts with was a topic of discussion in at least three of the focus groups including the staff session. This was also a topic that surfaced during staff interviews, indicating that it is both an internal priority for many at the organization as well as something of prominent importance to those that NC Sea Grant serves. Our recommendations for ensuring that an even more diverse group is represented in future planning processes and throughout the remainder of the current process are:

1. **Take steps to increase future attendance rates.** This may include holding some stakeholder events outside of typical business hours in neutral spaces, and avoid scheduling near holidays. While we understand that this likely presents significant logistical challenges for NC Sea Grant staff (a note also made during several staff interviews), it may also make engagement opportunities more accessible to a wider group of individuals and could potentially increase participation rates. One staff member also suggested considering hosting future sessions at more neutral or convenient locations, as was done in Morehead City, rather than at university locations. Krueger’s text on focus groups also notes that personalized follow-up on invitations (by phone or in person) can emphasize the importance of the session and encourage increased
participation rates (1990). If this approach was not used, for future iterations of the planning process this may be helpful in securing participation by groups that have the potential to be underrepresented.

2. The writing team should discuss ways to incorporate diversity into the strategic plan. While diversity is not likely to be included as one of the primary topical focus areas chosen, based on the mission of the organization and the focus areas typically chosen for strategic plans by both the National office and NC Sea Grant. However, diversity was discussed in different ways at many of the focus groups, as well as by staff during interviews before and after the focus groups. Therefore, increasing the diversity of who participates in the planning process as well as who Sea Grant is reaching with their work seems to be a priority for both stakeholders and NC Sea Grant staff and partners. Our report addresses diversity of professional affiliation of focus group participants, but issues of racial, ethnic, gender, and economic diversity of NC Sea Grant stakeholders also arose in several conversations with staff. We do not have appropriate data to assess most of these factors within the scope of this report. However, we recommend that the management staff or the writing team develop their own goals with respect to diversity, and that the writing team consider how to incorporate an emphasis on diversity into the final plan. This could include a sub-topic within some or all of the chosen topical areas, focusing on actions that can increase the diversity of partners and those reached by NC Sea Grant programs and publications. The 2014-2017 plan does include a note about prioritizing diversity as it relates to graduate and professional student opportunities, but based on focus group discussions a broader approach to this issue could be incorporated. Based on our assessment of gender diversity at the focus groups, this is one example of an area where NC Sea Grant could work to extend its reach, reaching out to more female constituents in coastal communities. However, diversity means different things to different staff and stakeholders, so this may be an area where NC Sea Grant may want to incorporate additional feedback from staff, Advisory Board members, or others when defining goals.

3. Distinguish between functional and topical priorities when soliciting feedback or guiding discussions of plan content. Providing more upfront clarification on how responses should be framed in order to be most helpful to the writing team may help eliminate some of the confusion
we observed during focus groups. Based on the focus areas provided by the National Sea Grant Office and used in past Strategic Plans, we anticipate that topical focus areas are likely to be more beneficial than functional ideas to the staff who will be writing the final plan. This observation allowed our team to be strategic about our word choice and question design in the survey that we designed for distribution to the broader public (see Chapter 4). Keeping this potential confusion in mind throughout the process, and providing maximum clarification in advance of any other internal or external efforts to solicit feedback will be to the advantage of the writing team.

4. In future sessions, distribute brief follow-up surveys to focus group participants, as well as invitees who did not attend. For focus group participants, this may address possible issues of unevenness in contribution among those who were involved in both stakeholder and staff focus groups by providing a formal opportunity for individuals to express opinions about the focus group process. This can be beneficial both for the strategic planning process, but also for any other similar processes that staff may undergo for other purposes. Staff and the facilitator made it clear at the public and staff sessions that participants should feel free to contact them after the group, however, depending on a participant’s familiarity and comfort with NC Sea Grant staff, a formalized request for feedback is likely more encouraging of meaningful participation and opinions, particularly for those who are unaffiliated with NC Sea Grant. This type of survey is also an excellent opportunity for staff to solicit names of contacts from participants that may be useful in this planning process or as future partners or contacts. These contacts would be particularly useful as the staff assess their options for reaching as representative a sample as possible in survey distribution to coastal and inland stakeholders. An extremely brief (1-2 question) survey distributed to invitees who did not attend would also help clarify reasons that community members did not attend. It may also be useful to send the general public survey (see Chapter 4) to these individuals; while the results of this survey would need to be separated from those of the random public sample, it would give them a formal opportunity to express opinions on focus areas that they did not have the opportunity to contribute in person.

5. If focus groups are conducted in future planning processes, consider holding one inland focus group specifically for academic stakeholders. Conversation at the second inland focus
group was dominated by academic interests. This is not necessarily negative in itself as researchers and faculty are an important constituency for NC Sea Grant. However, with more than half the group affiliated with academic institutions, some other participants’ opinions and priorities might not have been assessed as fully in this setting. If NC Sea Grant would like to incorporate a large number of stakeholders from academia in the process, it may be beneficial to provide them with their own session, to allow them to hold a more directed conversation. The literature notes that particularly for groups with specialized experience or more expertise with a subject, smaller groups are also preferable (Krueger 1990).

Both the topical results of the focus groups and the areas of confusion our team observed during focus groups guided our development of a survey instrument to be distributed to a broader sample of NC Sea Grant’s constituency. The next section discusses the process of developing this tool, and focuses on reaching the general public through surveying in addition to the in-person stakeholder engagement methods used by staff earlier in the planning process.

4. Survey

The purpose of the focus groups was to gather stakeholders from universities, government agencies, NGOs, local businesses, and other affiliations together to discuss and brainstorm the most important issues for NC Sea Grant to concentrate resources on over the next four years. While the focus groups had good representation from some stakeholder groups, there was less participation from user groups (i.e. the communities that benefit from NC Sea Grant research and education) and some other stakeholder groups. The purpose of the 2016 NC Sea Grant Strategic Planning Survey is to fill in those gaps in representation. The survey will elicit the opinions of those stakeholders that were not necessarily represented in the focus groups as well as the North Carolina general public since NC Sea Grant efforts benefit all North Carolinians that use or visit the coast in some way. While the survey does not offer as in-depth of an understanding into the opinions and viewpoints of the public as the focus groups did for the stakeholder groups that were represented, it is the best way to reach a broader audience. Thus, the results of the survey will help to supplement the results of the focus groups and provide NC Sea Grant with better understanding of the priorities of state residents as a whole. Our role in this
process included creating an online survey instrument and providing recommendations for implementing the survey instrument.

4.1 Review of Past Surveys

In order to get a better idea of what kinds of relevant survey questions have or have not been asked of residents and professionals in North Carolina, we conducted a review of 29 past surveys about coastal issues. These 29 surveys included: nationwide surveys of coastal managers, a general survey of North Carolina voters, surveys focusing on issues of concern to North Carolina coastal user groups (i.e. seafood, coastal hazards, recreation, tourism, beach access, wildlife programs, offshore energy, rural coastal communities, and coastal planning), and surveys focusing on issues of concern to South Carolina coastal user groups (i.e. seafood and offshore energy; see Table 3).

We found that none of the surveys we reviewed specifically focused on identifying overall priority issues for the North Carolina coast. Many of the user group surveys focused on a specific coastal topic and thus only asked about information and issues related to that topic. For example, in 2004 the N.C. Department of Transportation conducted a Northern Outer Banks Tourist Survey that asked about logistics of visitors’ stays, their recreational activities (specifically biking), and ways to improve their biking experience (Lawrie et al. 2004). The survey did not compare concerns and opinions about coastal recreation and tourism to other coastal issues. However, these surveys contributed to our understanding of some of the priority issues facing coastal North Carolina currently and in the past, which aided in the creation of response alternatives for priority issue questions in the 2016 NC Sea Grant survey. Additionally, they informed some of the demographic questions for the 2016 survey, such as how to assess visits to the coast, recreational activities, and residency, because they were relevant and specific to the North Carolina coast.

Some of the more useful surveys we reviewed were the Coastal Resource Management Surveys conducted nationwide by the National Oceanic and Atmospheric Administration (NOAA). Each of the four surveys asked different questions about coastal land use planning priority issues and needs (NOAA 2002, 2006, 2010, 2014). The results were divided by region with North Carolina falling into the Mid-Atlantic Region, and the respondents included state and federal agency employees working on natural resource or coastal management programs. While
these surveys were asking questions of interest for NC Sea Grant, the restriction of the survey to federal and state employees and the conglomeration of answers for states in the Mid-Atlantic region prevented the results from being completely applicable. Nonetheless, because the NOAA surveys were asking about similar topics of interest, we used some questions and results as models for a few of our questions and answer choices. Although some state and federal employees that take the NC Sea Grant Survey will be responding to a few questions that are similar to ones they have already been asked, they will be slightly different because the questions are specific to NC Sea Grant’s role regarding these issues. In addition, there are other stakeholders and community members who have not been asked these types of questions, and who will offer new perspectives.

Table 3. Summary table of the reviewed surveys or survey reports, organized chronologically.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Title of Survey or Report</th>
<th>Main Survey Topics</th>
<th>Year</th>
<th>Takeaways for our Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Carolina University</td>
<td>Ecotourists’ Motivational and Demographic Characteristics: A Case of North Carolina Travelers</td>
<td>Ecotourism</td>
<td>1998</td>
<td>Recreation Options, Variety of Question Types</td>
</tr>
<tr>
<td>North Carolina Sea Grant</td>
<td>North Carolina Coastal Plains Paddle Trails Initiative</td>
<td>Tourism, Recreation: Paddling</td>
<td>2001</td>
<td>Priority Issue Question Wording and Response Options</td>
</tr>
<tr>
<td>U.S. Forest Service</td>
<td>National Survey on Recreation and the Environment (NSRE)</td>
<td>Recreation, Tourism</td>
<td>2002</td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td>Title of Survey or Report</td>
<td>Main Survey Topics</td>
<td>Year</td>
<td>Takeaways for our Survey</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td>------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>University of North Carolina - Wilmington</td>
<td>Wrightsville Beach 2003 Survey of Beachgoers</td>
<td>Tourism, Recreation: Beach-going</td>
<td>2003</td>
<td>Informed Visits to Coast Question, Recreation Response Options</td>
</tr>
<tr>
<td>North Carolina Department of Transportation</td>
<td>The Economic Impact of Investments in Bicycle Facilities: A Case Study of the Northern Outer Banks</td>
<td>Tourism, Recreation: Biking</td>
<td>2004</td>
<td>Introduction, Recreation Response Options</td>
</tr>
<tr>
<td>University of Michigan</td>
<td>Local Commitment to State-Mandated Planning in Coastal North Carolina</td>
<td>State-Mandated Local Planning</td>
<td>2005</td>
<td>Priority Issue Response Options, Variety of Question Types</td>
</tr>
<tr>
<td>North Carolina Department of Environment and Natural Resources</td>
<td>Lasting Impacts of Hurricanes on North Carolina's Commercial Fishermen - Follow Up Survey</td>
<td>Hurricanes, Commercial Fishing</td>
<td>2005</td>
<td>Priority Issue Response Options</td>
</tr>
<tr>
<td>NOAA Coastal Services Center</td>
<td>Coastal Resource Management Customer Survey, 2006 Results</td>
<td>Coastal Resource Management</td>
<td>2006</td>
<td>Priority Issue Question Wording and Response Options, Variety of Question Types</td>
</tr>
<tr>
<td>Public Interest Energy Research (PIER) Program</td>
<td>Vulnerability to Coastal Impacts of Climate Change: Coastal Managers’ Attitudes, Knowledge, Perceptions, and Actions</td>
<td>Coastal Zone Management Challenges</td>
<td>2007</td>
<td>Priority Issue Response Options, Variety of Question Types</td>
</tr>
<tr>
<td>U.S. Army Corps of Engineers</td>
<td>Valuing Beach Access and Width with Revealed and Stated Preference Data</td>
<td>Beach Access in North Carolina</td>
<td>2008</td>
<td>Informed Visits to Coast Question Wording for Occupation, Education and Priority Issue Response Options</td>
</tr>
<tr>
<td>North Carolina Sea Grant</td>
<td>Assessing the Public’s Awareness and Understanding of Rip Currents at Wrightsville Beach, Carolina Beach and Kure Beach in New Hanover County, North Carolina, USA</td>
<td>Beach Awareness and Safety</td>
<td>2008</td>
<td>Question Wording for Occupation, Education and Priority Issue Response Options</td>
</tr>
<tr>
<td>Organization</td>
<td>Title of Survey or Report</td>
<td>Main Survey Topics</td>
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<td>Takeaways for our Survey</td>
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<td>University of North Carolina - Wilmington</td>
<td>US Tsunami Survey New Hanover County, North Carolina Communities: Wrightsville Beach and Carolina Beach</td>
<td>Tsunami Awareness</td>
<td>2008</td>
<td>Question Wording for Birth Year, Priority Issue Response Options</td>
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<td>Analysis of a Niche Market for Farm-Raised Black Sea Bass in North Carolina</td>
<td>Seafood Preferences</td>
<td>2008</td>
<td>Priority Issue Question Wording and Response Options, Variety of Question Types</td>
</tr>
<tr>
<td>NOAA Coastal Services Center</td>
<td>Coastal Decision-support Tool, Data and Information Resource, and Technical Assistance Customer Survey</td>
<td>Coastal Management Tools</td>
<td>2008</td>
<td>Formatting, Variety of Question Types</td>
</tr>
<tr>
<td>South Carolina Office of Ocean and Coastal Resource Management</td>
<td>An Assessment of Shoreline Management Options Along South Carolina Coast</td>
<td>Coastal Management Tools</td>
<td>2009</td>
<td>Priority Issue Question Wording and Response Options, Variety of Question Types</td>
</tr>
<tr>
<td>NOAA Coastal Services Center</td>
<td>Coastal Resource Management Customer Survey, 2002 Results</td>
<td>Coastal Resource Management</td>
<td>2010</td>
<td>Priority Issue Response Options, Demographic Question Types</td>
</tr>
<tr>
<td>Duke University</td>
<td>Interpreting Amenities, Envisioning the Future: Common Ground and Conflict in North Carolina’s Rural Coastal Communities</td>
<td>Rural Landscapes, Communities, and Development</td>
<td>2010</td>
<td>Introduction, Priority Issue Response Options</td>
</tr>
<tr>
<td>U.S. Coast Guard</td>
<td>National Recreational Boating Survey</td>
<td>Recreation: Boating</td>
<td>2011</td>
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</table>
### Review of Surveys or Survey Reports (Continued)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Title of Survey or Report</th>
<th>Main Survey Topics</th>
<th>Year</th>
<th>Takeaways for our Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Carolina Sea Grant</td>
<td>North Carolina Strategic Planning Survey</td>
<td>Coastal Priorities and Issues</td>
<td>2012</td>
<td>Introduction, Survey Formatting, Question Types, Priority Issue Question Wording</td>
</tr>
<tr>
<td>East Carolina University</td>
<td>Wind Turbines and Coastal Recreation Demand</td>
<td>Offshore Wind Energy</td>
<td>2012</td>
<td>Priority Issue Response Options, Formatting</td>
</tr>
<tr>
<td>Elon University</td>
<td>North Carolina State Survey of Registered Voters: Attitudes on Issues Facing the State</td>
<td>Major Political Issues</td>
<td>2013</td>
<td>Priority Issue Response Options, Demographic Question Types</td>
</tr>
<tr>
<td>North Carolina Aquarium Society</td>
<td>Membership Survey</td>
<td>Tourism</td>
<td>2014</td>
<td>Recreation Response Options</td>
</tr>
<tr>
<td>NOAA Coastal Services Center</td>
<td>Insights into Coastal Management Needs</td>
<td>Coastal Resource Management</td>
<td>2014</td>
<td>Priority Issue Question Wording and Response Options, Variety of Question Types</td>
</tr>
</tbody>
</table>

#### 4.2 Comparison of the 2012 and 2016 Surveys

Along with the past surveys reviewed above and the results from the stakeholder focus groups, one of the main resources we used when creating the 2016 survey instrument was the 2012 NC Sea Grant Strategic Planning Survey. The 2012 survey consisted of eight questions with most of the questions focusing on priority issues for the North Carolina coast within the six NC Sea Grant focus areas at that time (see Appendix B). In this section, we will discuss some of the weaknesses of the 2012 survey, and how they can be addressed in the 2016 survey.

Upon examining the 2012 NC Sea Grant survey in preparation for the 2016 survey, we identified five areas of potential improvement based on survey literature and our previous experience developing survey instruments: the introduction, the sampling frame, the question types, question wording, and the overall survey formatting.
4.2.1 Area 1: Introduction

The 2012 survey instrument lacked any formal introduction explaining the purpose of the survey, how the results were going to be used, or general instructions. Because it was an email survey, there may have been some sort of introduction in the email, but an introduction within the survey itself is much more useful for orientating respondents to the task at hand. According to Groves, Cialdini, and Couper (1992), participating in a survey is usually based on a prominent message in the survey introduction that appeals to or motivates the respondent. People participate in surveys because it provides them with an opportunity to share their opinions or contribute their knowledge (Zmud 2001). A well-written survey introduction caters to these reasons and gives respondents motivation to participate. Therefore, a lack of introduction may have a significant impact on the response rates.

According to Zmud (2001), survey introductions should be short and concise with just a few sentences identifying the researchers or organization, if necessary, and the purpose of the survey. As a result, for the 2016 survey, we developed a short introduction that thanks respondents for participating, states the purpose of the survey, provides brief instructions, and states the confidentiality of the results. In order to motivate respondents, we specifically highlighted their ability to express their opinions on coastal issues.

4.2.2 Area 2: Sampling Frame

How successfully a survey sample represents the intended population depends on the sampling frame and sample size (Fowler Jr. 2013). The sampling frame was one of the bigger issues that we saw with the 2012 survey due to unequal representation of NC Sea Grant stakeholders. Of the 137 respondents, 46.6% were government employees and 22.2% were university researchers. While these stakeholder groups are certainly the ones that tend to interact with NC Sea Grant the most, they do not represent all of the groups that NC Sea Grant attempts to interact with and serve through its research and education efforts, nor do they represent the general public.

Researchers typically are not interested in the characteristics of just the sample that is surveyed, but instead try to draw conclusions about the population the sample is supposed to represent (Fowler Jr. 2013). A sampling frame that does not completely cover its target
population results in a reduced ability to generalize from a sample and produce accurate results (Fowler Jr. 2013). The unequal representation of the sample for this survey makes it difficult to extrapolate the information to the larger target population. Thus, for the 2016 survey, NC Sea Grant management staff have put more of an emphasis on the selection of the sampling frame. They have been in contact with demographic and polling specialists in order to ensure that the survey is as representative of the desired population as possible. The sample frame is still being developed, but it is already a step above the previous survey’s sampling frame.

It could be that the 2012 survey reached a broader representation of NC Sea Grant stakeholders than the results show, but there was only one demographic question included in the survey—“Please check all boxes that describe you” with the boxes listing occupations, residency, and recreational activities. Incorporating only one demographic question makes it harder to determine if the sampling frame was representative of the intended survey population. In the 2016 survey, we expanded the demographic questions to include the typical demographic questions found in most surveys (age, income, gender, and education), as well as some that were specific to North Carolina (recreation, type of resident, and visits to the coast)—these questions specifically was informed by our review of surveys in Section 4.1. With the improved sampling frame, these demographic questions should be a good indicator of the representativeness of the survey population.

4.2.3 Area 3: Question Types

Out of the eight questions in the 2012 survey, six were open-ended, one was ‘check all that apply’, and one was a Likert scale question. Open-ended questions are preferable if the researcher does not want to influence responses (Dillman et al. 2009). However, while open-ended questions can allow for researchers to obtain unanticipated answers, open-ended questions tend to result in rare answers that are more complicated to analyze (Fowler Jr. 2013). The results for a few of the open-ended questions in the 2012 survey demonstrated this outcome—some of the answers did not fit into broader categories that could be analyzed. For example, for the question “What is the single most important issue facing North Carolina’s coast?”, along with common answers relating to climate change and overdevelopment, answers included “Oregon Inlet,” “economic,” and “the green con.” Without more information or descriptions to support these answers, it is hard to understand the intention behind them and accurately categorize them.
Additionally, research suggests that there are higher rates of item nonresponse for open-ended questions than other types of questions (Millar & Dillman 2012). The open-ended questions for the 2012 had non-response rates of 67%, 75%, 74%, 85%, 13%, and 91% whereas the close-ended questions had non-response rates of 0% and 1%. Completing open-ended questions requires more time and energy than close-ended questions, which could explain the differences seen in the response rates (Dillman 2008). Thus, limiting the number of open-ended questions and including more close-ended question types may lead to higher response rates and easier to interpret data.

To combat high non-response rates for the 2016 survey, we limited the amount of open-ended questions included in the survey instrument to five out of 23 questions. Three of those five are demographic questions: birth year, occupation, and zip code. Open-ended questions, where a respondent provides a numerical response (like those for birth year or zip code), can be easier to answer than close-ended categories with ranges of values (Dillman et al. 2009). In addition, questions where the list of potential answers is too long to give to respondents (like those for occupation and zip code), open-ended questions can be preferable (Fowler Jr. 2013). The other two open-ended questions were strategically placed to elicit some important opinions where providing response alternatives would have been insufficient. One open-ended question asks about two ranking questions that come before it in the survey and why respondents potentially ranked answers differently. The other is a comment box at the end of the survey where respondents can write any last opinions or thoughts about the survey.

The rest of the 2016 survey instrument contains close-ended questions, such as ranking questions, Likert questions, multiple choice questions, and ‘check all that apply’ questions. Not only will the focus on close-ended questions increase response rates, but it will make data analysis much easier for NC Sea Grant. According to Fink (2012), close-ended questions are more efficient and reliable. They are efficient because they are easy to answer, code, and analyze the resulting data (Fink 2012). They are reliable because everyone responds to the same options—there are no issues with categorizing results or gathering data that is not analytically useful (Fink 2012). Overall, with the majority of questions drafted as close-ended, it should be easier for respondents to answer each question, reduce the amount of time it will take NC Sea Grant to analyze data, and potentially give NC Sea Grant more useable data for analysis.
4.2.4 Area 4: Question Wording

Crafting survey questions can be difficult because it entails understanding how the question conveys meaning to respondents as well as how all parts of the question convey meaning independently (Dillman et al. 2009). If one part of a question is unclear, or if one part conflicts with another part, it can reduce the accuracy and reliability of the responses (Dillman et al. 2009). One pitfall that makes a question and the resulting responses unreliable is to ask more than one question at once (Fowler Jr. 2013). The demographic question in the 2012 survey, discussed in Area 2, is a prime example. The question asked respondents to check all the boxes that described them, but the answer responses listed three different types of answers: occupation, recreational activity, and residency. This question should have been separated into three different questions to make the question and the desired response more clear.

Due to the lack of clarity, there is the potential that respondents missed answering one or multiple parts of the question and/or answered the same question multiple times. This is evidenced by the percentages corresponding to the occupation and residency answer responses—the occupation responses added up to 120% and the residency responses added up to 97%. It may be that people hold multiple jobs or positions and thus selected multiple boxes, but due to the way this question was worded and presented it is not possible to draw any accurate conclusions. For the residency responses, it could be that some of the respondents missed that part of the question, resulting in less than a 100% response rate. For the 2016 survey, we broke up the demographic question used in the 2012 survey into three questions addressing occupation, recreation, and residency, and added more response alternatives to make it more representative of the survey population. In addition, we made sure that each survey question was only asking for one type of response to increase the reliability and clarity of the survey.

One of Dillman et al.’s (2009) guidelines for writing good survey questions includes “use[ing] complete sentences with simple sentence structures.” For the six questions in the 2012 survey that asked about priority issues, this guideline can serve as a way to improve the wording of those questions. For example, the third question read:

“SUSTAINABLE COASTAL DEVELOPMENT Healthy coastal economies—working waterfronts, recreation and tourism, coastal access. Protect the resources needed to sustain coastal ecosystem and quality of life. Balance multiple uses (social, economic and environment) of resources and optimize environmental sustainability. PLEASE ADD ADDITIONAL SUB-TOPICS IN BOX BELOW.”
The use of incomplete sentences makes the question harder to read and comprehend. Additionally, because the question itself is not a complete thought, it may confuse respondents and result in misunderstanding the type of response desired. This lack of clarity could have been partially responsible for the low response rates for these questions in addition to being open-ended as discussed in Area 3. In the 2016 survey, when discussing the different focus areas and priorities that can fall under those focus areas, we used complete sentences and attempted to make it as clear as possible what kinds of answers we were expecting from respondents. With an enhanced focus on question wording, the 2016 survey should result in higher quality answers from respondents and thus more accurate data.

4.2.5 Area 5: Survey Format

For a self-administered survey, the main goal is to make it easy-to-use and laid out in a way that is clear and uncluttered (Fowler Jr. 2013). There are multiple types of survey software, such as Qualtrics, Survey Gizmo, Question Pro, and Survey Monkey, that researchers can use for developing survey instruments and distributing surveys online and via email. Each software program has pros and cons in relation to price, ease of use, and special features. The 2012 survey was developed and distributed using Survey Monkey. Some positive aspects of Survey Monkey are that the basic version of the software is free and the user interface is easy to navigate. However, the free version limits the number of questions that can be used per survey, limits the number of responses per survey, and has few technical features, specifically only 15 question types and limited skip logic options. With a survey meant to be distributed widely throughout the state, the restrictions of the free Survey Monkey software make it less useful for the 2016 survey as opposed to the small size of the 2012 survey.

There is a subscription version of Survey Monkey that increases question and response numbers and includes more features, but we recommended a program called Qualtrics that NC Sea Grant has access to through its association with North Carolina State University. Numerous business and academic reviews consistently rank Qualtrics as one of the best survey software options available (Carr 2013, Masnick 2013, Zhuravel 2014). Although a Qualtrics subscription is quite expensive, that cost is already covered by North Carolina State University. Some of the more positive aspects of Qualtrics are the sleek, polished look of the survey and the wide range of technical features, such as 100+ question types, sophisticated survey logic (branching and
filtering options), and customized layouts and logo uploads. Overall, changing the survey format to Qualtrics gave us more options in terms of customization and skip logic and enhanced the overall survey look to give it a more professional feel.

With these changes, we are confident that the 2016 survey will have lower item non-response rates, better represent the target population, and result in more quality data for use in the analysis of the coastal priorities of North Carolina residents than the 2012 survey.

4.3 Pretesting

Once a survey instrument is near completion, conducting a pretest allows the researcher to assess how the instrument will work under realistic conditions (Fowler Jr. 2013). Pretesting can help identify formatting issues, questions that need to be reworded or clarified, and the survey instrument’s ease of use. In addition, pretesting can provide information about how long it takes to complete the survey, which can have implications for the length of the survey and the number of questions included (Fowler Jr. 2013). The main goals for pretesting the NC Sea Grant survey instrument were to ensure it took 15 to 20 minutes to complete, identify any technical issues, and isolate questions that needed to be edited and/or reworded.

4.3.1 Methods

The survey was administered to 19 graduate students from the Duke Marine Lab and the Nicholas School of the Environment and six community members from the Beaufort, NC area. Students constituted the majority of the pretest population in order to avoid administering the survey to people that would be possible recipients of the final version. However, a few community members participated in pretesting as well to insure that the questions and answers were clear for respondents of different ages and those who were not as heavily involved in the environmental field.

There were two student pretest groups, one at the Duke Marine Lab in Beaufort and one at the Nicholas School of the Environment in Durham (see Appendix C for the script). Each student completed the survey on their own either using a computer or a tablet. Each student was also given a paper survey, so that they could provide written comments. Upon completing the
survey, the students were given time to write their comments on the paper survey, keeping in mind the following three questions:

1. Did you feel that the instructions provided were clear? Did you understand what you were being asked to do, and why?
2. Were any questions particularly unclear or confusing?
3. Did you have any problems understanding what kind of answers were expected for each question?

After they finished writing their comments, the students engaged in a discussion about each of the three questions and provided their thoughts on what aspects of the survey could be improved or changed. We took detailed notes about their comments and suggestions and collected the paper surveys at the end of each pretest session.

The community members in Beaufort were administered the survey on tablets in a small coffee shop. They were also given a paper survey to write comments on during and after the survey. After completing the survey, we verbally asked them to answer the same three questions as the students and wrote down their responses. We collected their paper surveys at the end as well.

All comments were entered into a spreadsheet for analysis. We used those comments to alter the survey and bring certain issues to our client’s attention. Additionally, we conducted a short analysis of the responses to the survey to identify questions that were skipped more often than others and further improve the survey.

4.3.2 Pretest Results

Pretest Demographics

The main purpose of the pretest was to identify technical kinks and wording issues in the survey, not necessarily to be representative of NC Sea Grant stakeholders or North Carolina as a whole. However, to provide some context for the data and feedback collected from the pretest, the demographics are discussed below.

In total, 25 people took the pretest survey. As illustrated by Figure 4, 46% of the respondents were coastal residents and 23% were residents of another state. The high number of out-of-state respondents was due to the number of students taking this pretest.
For education, eight respondents had a Master’s degree and 15 respondents had a Bachelor’s degree (Figure 5). Only one respondent had some college, but no degree (Figure 5). Again this skewed result is due to the large number of students taking this pretest.
Although 81% of respondents were in the 20-34 year old range, there was some representation in older age ranges as well (Table 4). The older subset is most likely due to the community pretest that was conducted in Beaufort.

Table 4. Distribution of respondents across age brackets (n=21).

<table>
<thead>
<tr>
<th>Age Bracket</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>14%</td>
</tr>
<tr>
<td>25-34</td>
<td>67%</td>
</tr>
<tr>
<td>35-44</td>
<td>0%</td>
</tr>
<tr>
<td>45-54</td>
<td>5%</td>
</tr>
<tr>
<td>55-64</td>
<td>10%</td>
</tr>
<tr>
<td>65+</td>
<td>5%</td>
</tr>
</tbody>
</table>

Data Analysis

Part of the intention of this pretest was to analyze the data to determine how long it took respondents to complete the survey, identify questions that might have been "missed" or skipped more than other questions, and list any answers that were written in the "other" option of questions to see if they might be relevant as an actual answer.

Timing

The time it took participants to finish the survey ranged from 6-31 minutes, with the average at approximately 13 minutes. There were some technical difficulties with two of the survey questions, so once that is fixed we expect the time to take the survey should decrease.

Item Non-Response

There were a number of questions left blank or unanswered in the survey with the majority including demographic questions. Eight respondents did not fill out the zip code question, four did not fill out the birth year question, two did not fill out the residency question, and one did fill out the income question. Part of the reason for item non-response for these questions, particularly zip code and birth year, may be due to where they were located in the survey. We received multiple comments that indicated respondents did not see those questions in the online version of the survey. As a result, we moved the order of the demographic questions to make those questions easier to see. Another potential reason is because along with open-ended
questions, household or personal demographic questions tend to have instances of item non-response (Zmud 2001). Even though there is evidence that self-administered surveys produce less social desirability bias, which is when respondents would rather not report accurately or at all to a question due to social norms, some people still do not feel comfortable sharing sensitive demographic information such as income and age (Fowler Jr. 2013). Unfortunately, in this case, there is not much that can be done on the part of the researcher.

Two of the main open-ended questions included in the survey were also frequently left blank. One open-ended question asked about the reasoning for being willing or unwilling to subscribe to Coastwatch. This question used display logic, so not all respondents saw it. Of the fifteen respondents that were asked the question, ten answered it. The other open-ended question followed two ranking questions, one which asked respondents to rank focus areas currently and one which asked respondents to rank focus areas five years in the future, and asked about the reasoning for changing the ranking between those questions. Only eleven respondents out of twenty-five answered that question. Unfortunately, the two questions that many respondents had technical difficulties with were these ranking questions, so it is unclear if the question was left blank because respondents did not feel like responding or if they were unable to change the rankings and thus had nothing to add for that question. As can be seen from Table 5, there were no noteworthy changes in ranking for the five focus areas, but there were some slight increases and decreases for certain focus areas. However, again it is unclear if the lack of change is due to technical difficulties, their actual opinions, or the questions themselves. We will be discussing these questions in particular with NC Sea Grant management to see how they would like to move forward with them.
Table 5. With 1 being the most important and 5 being the least important, this table displays the average rankings and average change in rankings provided by pretest respondents for the five NC Sea Grant focus areas in response to two ranking questions.

<table>
<thead>
<tr>
<th></th>
<th>Fisheries</th>
<th>Communities</th>
<th>Watersheds</th>
<th>Hazards</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Ranking</strong></td>
<td>2.4</td>
<td>2.6</td>
<td>2.7</td>
<td>3.5</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Future Ranking</strong></td>
<td>2.7</td>
<td>2.4</td>
<td>2.4</td>
<td>3.6</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Average Change</strong></td>
<td>0.32</td>
<td>-0.13</td>
<td>-0.17</td>
<td>0.22</td>
<td>0</td>
</tr>
</tbody>
</table>

**Write-In Answers**

There were three questions where respondents wrote in an answer in the “other” option. The following answers were written for the question asking about where respondents get information about coastal issues:

- “Radio”
- “Academic study”
- “Duke University”
- “Class”
- “Bitandgrain.com”
- “Nonprofit organizations”

Due to our pretest population, there were a few write-in answers referencing school as a place to get information. While the majority of North Carolinians who are of the appropriate age to take a survey (18 years of age or higher) are not students studying environmental management, we will consult with NC Sea Grant management about the addition of “School” to the answer response list. We will also consult with them about adding “Radio” since many people still listen to the radio frequently for news or entertainment purposes. For the questions relating to priority issues within focus areas, there was a write-in of “working waterfronts” in relation to the sustainable communities focus area and “communication with homeowners” in relation to the coastal hazards focus area. The final question with the write-in answer of “aquariums/museums” was for the question asking about coastal activities.
Overall, the results of the pretest itself provided some useful data for how to improve the formatting of the survey and some of the answer responses, specifically the addition of some answers regarding where respondents get coastal information and reordering the demographic questions. However, some of the more major changes, such as how to move forward with the ranking questions and the associated open-ended questions, will need to be discussed with NC Sea Grant management. Finally, the results confirmed that the survey, on average, takes about the amount of time that we expected.

4.3.3 Survey Edits

In addition to analyzing the data from the pretests, we also used written comments from participants and our notes from group discussions to make edits to the survey. Upon compiling and going over all of the comments, we divided them into two types of changes: technical/formatting changes and content/word choice changes.

Technical/Formatting Changes

There were a number of changes that respondents suggested relating to formatting and technical portions of the survey. The majority of them were minor, easy to fix, and extremely useful.

The most frequent technical complaint that we received from almost every respondent was difficulty with the two ranking questions. The question software is setup so that each focus area must be dragged and dropped to change the rankings. Many people were eventually able to figure out how to move the rankings, but it took more time than should have been spent on those questions. However, some people, particularly the community members from Beaufort, needed verbal instructions for how to change the rankings. Because we want this survey to be as straightforward and easy to take as possible, we changed the question format to one where the rankings can be typed in.

Another issue that was brought up was the banner at the top of the survey, which had the NC State logo. Many respondents were confused since it was a survey for NC Sea Grant and we introduced ourselves as Duke students. Because this Qualtrics account is associated with NC State, the default banner is the NC State logo. In Qualtrics, you can customize the banner to
feature a particular logo or a generic Qualtrics banner, so we will be recommending the use of the NC Sea Grant logo to management staff.

There were also a few comments relating to buttons at the bottom of the survey and the need for a progress bar. Originally, the survey had no back button, but because there is no specific reason that respondents should not be able to move back and forth in the survey, we added one based on participant feedback. We also labelled the buttons “Next” and “Previous” since one participant had trouble figuring out how to move forward in the survey. There was one written comment and several verbal comments concerning the need for a progress bar, and since it is a common feature in online surveys we took it into consideration. A meta-analysis of 32 experiments looking at the effects of progress bars on completion rates found no consensus (Villar et al. 2013). However, progress bars that move faster in the beginning and slower as the survey continues have been found to reduce the number of people that do not finish the survey (Villar et al. 2013). Therefore, we will recommend to NC Sea Grant management that if they choose to use a progress bar it should be the fast-to-slow version.

We also received feedback about the five questions where respondents are asked to choose priority issues within a focus area. Multiple people suggested adding the definition of the focus area to the top of the question as a reminder when answering the question. Thus, we added the definition in italics so that future respondents do not have to move back and forth in the survey in order to remember what each focus area encompasses. We also received complaints about the spacing of the answer responses because the “other” option created an odd space between some answer responses in the columns next to it. To fix this, we added more columns to even out the answer responses and get rid of the space. Finally, in response to comments, we bolded “North Carolina Sea Grant’s resources and time” and “within the above focus area” in order to highlight the importance of those parts of the question.

**Content/Word Choice Changes**

The participants in the pretest also suggested a number of word choice and content changes to improve the clarity of the survey. Some of the changes suggested were small word choice and content changes that we felt confident making without specific permission from NC Sea Grant management, but some involved larger content changes that will need to be discussed with the leadership team.
Some of the smaller word choice and content changes involved the introductory text to the survey, the “About NC Sea Grant” section, the ranking questions, and link provided after the resource questions. Part of the intro text reads: “The results of this survey will be used to help North Carolina Sea Grant staff assess the priorities of North Carolina residents about coastal issues, as part of an ongoing strategic planning process.” However, we were asked to clarify “strategic planning process,” so we altered the phrase to read: “The results of this survey will be used to help NC Sea Grant staff assess the priorities of North Carolina residents about coastal issues. This is part of an ongoing strategic planning process, which will help guide how NC Sea Grant allocates time and resources in the coming years.” In addition, in the “About NC Sea Grant” section of the survey, we were asked to add a little more information, specifically when it was founded, so we added the founding year to the beginning of the section.

For both ranking questions, it was suggested that we move the timeframe phrases “currently” and “over the next five years” to the beginning of the sentence and change the “are” to “should be.” See below for how we edited these questions.

Before: What do you think are the most important focus areas to currently concentrate North Carolina Sea Grant's resources and time on?

After: Currently, what do you think should be the most important focus areas to concentrate North Carolina Sea Grant's resources and time on?

We agreed that both of those adjustments made the question clearer and easier to understand, and changed them accordingly. At the request of management, we had included a link to the NC Sea Grant website after asking respondents about different NC Sea Grant online resources. Many respondents suggested that the link should be put at the end instead because it made them want to click the link and leave the survey. As a result, we removed that section of text since we have a link to the website at the end of the survey.

There were also a few comments concerning larger content issues that we will discuss with management before making any changes. For the questions asking about priority issues within focus areas, most of the comments concerned the response alternatives. Issues included that some response alternatives had a positive connotation and some a negative connotation, some had overlapping ideas, and certain terms needed clarification. Because these questions are where the bulk of the comments were directed, we feel that the specific comments need to be discussed with management before making any decisions. In addition, a couple of participants
inquired about whether Coastwatch costs money and if we could provide that information in the description about Coastwatch. Katie Mosher, the Director of Communications, specifically wanted the question associated with the description, so we want to get her opinion before making that change. Lastly, many of the students brought up the ethical issue of not including a “prefer not to answer” option for the demographics questions. We were specifically instructed to leave it out by management since the introduction explains that any question can be skipped. However, since a large number of participants mentioned it, we feel that we should bring that sentiment to the attention of management.

The main goal of this pretest was to identify any issues with the survey and remedy them, and the data and feedback we collected during the pretest have vastly improved the survey. Upon discussing and making the remaining potential changes with the management team, this survey instrument will be in good shape for implementation.

4.4 Discussion and Recommendations for Implementation and Analysis

Due to the timeline for our project as well as NC Sea Grant’s timeline for its strategic planning process, we are only involved with developing the survey instrument, and not with distribution. However, we have provided recommendations and a coding tool to help NC Sea Grant with implementing the survey and analyzing the results.

4.4.1 Implementation

Currently, the survey instrument has 23 questions and is designed to be implemented as an online survey (see Appendix D). However, NC Sea Grant management has discussed changing it to a mail or telephone survey to improve the sampling frame based on discussion with polling experts. According to Fowler Jr. (2013), the mode of survey data collection (online, mail, or telephone) is related to “the sample frame, research topic, characteristics of the sample, and available staff and facilities” (pg. 61). There are many pros and cons to choosing one mode over another including but not limited to differences in response rates, the size of the potential sampling frame, and the types of questions that can be asked (Fowler Jr. 2013).

The way that the survey is currently formatted and worded makes it very difficult to convert it into a telephone survey. Although the use of random-digit dialing to sample the population is useful, telephone surveys are time-intensive and constrain the number of response
alternatives and the length of questions (Fowler Jr. 2013). Some of our questions are longer and have many response alternatives, which would be difficult to administer over the phone. Thus, due to NC Sea Grant’s limited resources in relation to time, staff, and funding, as well as the current format of the survey instrument, we recommend not changing the survey to a telephone format.

Mail surveys require much lower costs to implement than telephone surveys and provide access to a widely dispersed sample that may be difficult to reach by phone or online (Fowler Jr. 2013). Using Dillman’s Tailored Design Method, which contains guidelines for the construction of the mail survey and an implementation process with multiple mailings, response rates of 60-70% can be obtained from most populations (Dillman 1978). Currently, the survey can be easily converted to a mail survey with some adjustment of the questions that use display logic. However, the extra time and money needed to conduct a large mail survey, due to multiple mailings, data entry, and printing, may be outside of NC Sea Grant’s limited resources. On the other hand, online surveys have the benefit of very low implementation costs, but are limited to Internet users and available email lists, which are usually not comprehensive (Couper & Bosnjak 2010). Thus, the big tradeoffs between these two modes are resources vs. sampling frame. Because of this dilemma, some researchers have turned to a mixed-methods approach, which uses a combination of different modes. A mixed-methods approach can offer the benefits of lower cost modes with an improved sampling frame (Fowler Jr. 2013).

**Recommendation 1:** Although the sampling frame is a large focus for this survey, NC Sea Grant staff should work with polling experts to determine the best sampling frame for the survey in its current format—online—due to limited resources. However, if polling experts insist that the type of representation NC Sea Grant is looking for is not possible with an online survey, we suggest considering a mixed-methods approach using both mail and online surveys as a way to minimize costs and increase the robustness of the sampling frame. There would be statistical challenges associated with using two different types of surveys, but this option might better address NC Sea Grant’s needs and priorities for the survey.

One option for a mixed-methods approach would be to distribute the survey via mail to a random sample and also send out the survey via email to the NC Sea Grant listserv and/or other
lists that NC Sea Grant maintains. The email survey would not be a random sample and the results would need to be distinguished from the random sample results from the general public, but it would be a great way to include partners and stakeholders that regularly interact with NC Sea Grant. In one of the staff interviews, it was brought up that there was low attendance at the Skyco/Manteo focus group due to no-shows and last minute cancellations. However, there were a few people who were not able to attend, but were eager to help and participate later if they could. The survey could be a beneficial way to include those stakeholders and other stakeholders who have not been able to participate in the strategic planning process. Further, it could provide additional data and help NC Sea Grant identify knowledge gaps that are bigger for the general public as opposed to their informed and engaged stakeholders.

Developing a sample frame does not just affect the mode for implementation, it also determines sample size, how the sample is selected, and sampling error, which is the random error that results from collecting data from a sample instead of the whole population (Fowler Jr. 2013). Sample estimates from a survey should form a normal distribution around the true value for the population (Fowler Jr. 2013). Typically, the larger the sample size, the more accurate a sample estimate will be because the estimates will cluster around the true value for the population. Estimating the limits of confidence in a sample both for sample error and number of responses required for statistical significance will be based upon the final sampling frame. Because polling experts are guiding NC Sea Grant management in this area, they should be helping to develop a method for calculating sampling error based on the sampling strategy as well as determining the response rates needed to accurately represent groups of the general public. If not, management should enlist the help of a sampling statistician in order to make sure they have all of the necessary information for estimating confidence in the sample.

4.4.2 Coding

After data has been collected, answers need to be converted to data files that can be used for analysis. Coding that data to prepare for analysis usually takes four steps (Fowler Jr. 2013):

1. Design the code—the legend by which a respondent’s answers are assigned specific values.
2. Code—the process of assigning values to responses.
3. Data entry—entering data into a spreadsheet for analysis. This step is usually completed for you when using software for an online survey like Qualtrics.
4. **Data cleaning**—checking the data for accuracy and completeness before analysis. In order to assist staff with the coding process and since we are more intimately familiar with the survey, we designed a code to help complete step 1. The code can be found in Appendix E, however, it is not complete. We were not able to code for the open-ended questions because the answers cannot be predicted ahead of time. Instead it is more of an interactive process where categories emerge from the answers, so that answers in the same group are analytically similar (Fowler Jr. 2013). One important tip for creating a code for those kinds of answers is that the coding system should unambiguously assign each answer into one group or category (Fowler Jr. 2013). Otherwise, overlapping categories can make data analysis difficult. One recommendation for coding the occupation question is to use the U.S. Bureau of Labor Statistics’ Standard Occupational Classification (SOC) system. Each occupation within the SOC falls under one of 23 major occupational groups, which could be one way of categorizing the occupations that result from the survey (U.S. Bureau of Labor Statistics 2010).

**Recommendation 2:** Before the survey is implemented, NC Sea Grant should assign a staff member (or two) the responsibility of analyzing the data and summarizing the results as soon as possible. It is important for whoever is responsible for those products to be involved with the survey for the rest of development, implementation, and coding.

**4.4.3 Data Analysis**

While NC Sea Grant staff will have their own ideas about how to analyze the data and what would be best way to use results to guide the creation of the strategic plan, we have provided a recommendation for four ways of analyzing results that could be helpful in fulfilling this effort.

**Recommendation 3:** We recommend that NC Sea Grant staff calculate or analyze the following data in order to successfully inform the strategic plan and general public and stakeholder engagement efforts.
1) **Response rate (overall survey and individual questions)**

Because representation and the sampling frame have been such a large focus in this survey and this cycle of the strategic planning process, it will be important to calculate response rates for both the overall survey (number of people who completed the survey divided by the number of people sampled) and individual questions (number of people who completed a question divided the number of people who completed the survey). While a simple calculation, the response rates are important for determining non-response bias, which is when those not responding are different from the whole population (Fowler Jr. 2013).

2) **Demographic data compared to intended sample frame**

In association with the response rate, the results from the demographic data should be compared to the demographics of the intended sample frame to determine the representativeness of the survey results. This will provide NC Sea Grant with a better idea of how much weight they should give the survey when incorporating the results into the strategic plan.

3) **Residency and zip code data compared to the priority issues under each focus area**

Besides looking solely over the data provided by the questions relating to priority issues for each focus area, NC Sea Grant should compare that data with residency and zip code data. When writing the plan, it will be useful to know if there are regional differences in priorities, so that they can be researched further or addressed accordingly. It may result that coastal residents have very different coastal priorities than inland residents.

4) **Residency, zip code, and occupation data compared to familiarity with NC Sea Grant and/or use of NC Sea Grant resources**

In order to further NC Sea Grant’s engagement efforts with the general public, it would be useful to do a comparative analysis between who NC Sea Grant is already reaching and who they are not. One way to do this would be to compare residency, zip code, and occupation data with respondents’ familiarity with NC Sea Grant and/or use of NC Sea Grant resources. This could be a good step for analyzing which regions of the state NC Sea Grant should focus future engagement efforts as well as if there are certain employment sectors where NC Sea Grant could expand its outreach and education efforts.
4.4.4 Survey Report

In some of the staff follow-up interviews, the idea of the stakeholder engagement process being two ways was mentioned—the premise being that when NC Sea Grant reaches out to stakeholders or the general public for opinions or help, there is an obligation to report back with the outcomes or results. At least one staff member suggested that a draft strategic plan be circulated to focus group participants to get their feedback about whether their views were accurately reflected. A survey report is a good way to communicate with the intended audience about the conclusions and recommendations that result from a survey (Rea & Parker 2005). Thus, distributing a summary or short report of the survey to participants and relevant stakeholders would be equally as helpful for ensuring that the give-and-take with the general public and stakeholders is going both ways. This could be accomplished by providing survey respondents with a way to add themselves to a list where the results will be shared or widely publicizing the results among various stakeholder groups and public news outlets.

Recommendation 4: Due to the amount of time and resources involved with creating and, in the future, implementing this survey, we recommend the production of a thorough survey report on priority areas identified by the broader North Carolina public in order to inform the strategic plan—something that was not completed for the 2012 survey. In addition, we recommend the creation of a short summary that can be distributed to survey participants and interested stakeholders in order to inform them of the coastal priorities of their fellow North Carolinians and strengthen the lines of communication and engagement with stakeholders and the general public.

To guide staff on what to potentially include in the full survey report, we have listed some of the guidelines for survey reporting below as developed by Rea & Parker (2005).

- **Executive Summary**: It is helpful to include a short summary of the findings at the beginning as a source of reference and for audiences only interested in the main findings. The executive summary could double as the summary distributed to participants and interested stakeholders.
- **Introduction to the Survey**: It provides the audience with some background about the purpose and motivation of the survey and reviews any existing literature that may be relevant.
- **Method of Research**
○ **Sample Selection**: It includes details about how the sampling frame was selected and any discussion of errors or biases, such as nonresponse bias and sampling error.

○ **Survey Procedure**: It discusses the survey instrument and methods used for implementation of the survey.

○ **Data Analysis**: It describes the methods used to analyze the data and the reasoning behind the use of certain statistical tests and measures.

- **Survey Research Findings**: This is the main part of the report and should be composed mostly of tables and graphs, but when appropriate descriptive and analytical statistics and written explanations of results.

- **Conclusions**: The report should culminate with implications of the findings and results, and when appropriate provide recommendations.

- **Appendixes**: There are certain items that should be included in the report, but are too long to include in one of the main sections, such as the survey instrument, extra tables and graphs, mathematical equations, open-ended responses, and the coding sheet.

The survey report does not need to be extremely long, but it should cover all of these sections in one way or another.

The four recommendations listed above provide NC Sea Grant with some advice and guidance for how to continue the survey process after we leave the project. As a tool for filling in the gaps left by the stakeholder focus groups, the survey will be an important way for gaining a broad understanding of the priorities of North Carolinians in relation to coastal issues. In addition, we provide a key way to continue engaging the general public and stakeholders at the end of the survey process, something that will be important for fostering and expanding NC Sea Grant’s education and outreach network.
5. Final Recommendations and Conclusion

At the outset of this project, we aimed to assess whether North Carolina Sea Grant’s current strategic planning process is meeting our client’s goal of strengthening stakeholder engagement in the determination of the organization’s goals and focus areas for 2018-2021. Through interviews with staff both before and after the focus groups occurred, we were able to get a better understanding of where staff saw potential areas of improvement in the strategic planning process, their views on the focus groups, and their ideas for enhancing stakeholder engagement. Attending and observing the focus groups put staff views into perspective and allowed us to experience one of NC Sea Grant’s stakeholder engagement tools in action. Through the development of a public survey tool, we assisted NC Sea Grant with reaching beyond stakeholders to a broader audience, the North Carolina public. After interacting with NC Sea Grant in these three different ways, we have identified the following key strengths, challenges, and recommendations (Table 6). Over the course of this project, particularly through talking to both management and extension staff, it has become clear to us that staff leading the current planning process have made concerted and successful efforts to improve upon past planning processes. These recommendations offer suggestions of ways that staff can continue this trajectory of improvement as they assess their research and outreach priorities.
Table 6. This table lists the strengths, challenges, and recommendations that we have identified for staff involvement, stakeholder feedback / focus groups, and public feedback / survey.

<table>
<thead>
<tr>
<th><strong>Staff Involvement</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>1) The 2018-2021 strategic planning process has made considerable efforts to improve staff involvement by holding focus groups and working to improve overall intra-organizational communication.</td>
</tr>
<tr>
<td>2) Staff focus groups were found to be an effective method for teambuilding as well as creating an environment for discussion.</td>
</tr>
<tr>
<td>3) Involving extension staff in this iteration of the strategic planning process improves communication of stakeholder needs while additionally incorporating staff expertise.</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
</tr>
<tr>
<td>1) Gathering all of the staff together for a day-long focus group can be logistically challenging due to staff workloads and travel times from certain field offices.</td>
</tr>
<tr>
<td>2) Perceived success of staff involvement in strategic planning process is dependent on whether staff opinions and knowledge are incorporated into the final product.</td>
</tr>
<tr>
<td>3) It is challenging to delineate concrete goals that influence day-to-day work of staff in the strategic plan due to diverse roles and knowledge of staff members.</td>
</tr>
<tr>
<td><strong>Recommendations</strong></td>
</tr>
<tr>
<td>1) Staff focus groups should continue to be incorporated into the strategic planning process, with potential additions / alterations including:</td>
</tr>
<tr>
<td>a) Distribute summaries of the stakeholder focus groups prior to the staff focus group in order to increase staff preparedness and to better inform discussion.</td>
</tr>
<tr>
<td>b) Provide direction to staff about specific topic areas to address during breakout sessions and visioning exercises in order to cover as many different issues and ideas for collaboration as possible. Groups can be assigned topic areas based on staff expertise or their ability to inform potential projects and programs.</td>
</tr>
<tr>
<td>c) Facilitate follow-up discussions through meetings or conference calls about staff and stakeholder focus group results throughout the drafting of the strategic plan to ensure priority issues are adequately addressed and to encourage continued staff involvement.</td>
</tr>
<tr>
<td>2) Encourage early and consistent staff participation in drafting the final strategic plan—specifically, utilize expertise on topical areas and continue implementation of a writing team with extension and management staff representation.</td>
</tr>
<tr>
<td>3) Provide staff with a clear timeline for the strategic planning process and the creation of the strategic plan, including opportunities for staff involvement.</td>
</tr>
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</table>
### Stakeholder Feedback / Focus Groups

<table>
<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Challenges</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The use of a professional facilitator was praised frequently by staff.</td>
<td>1) Stakeholders who participated did not reflect the same level of diversity of affiliation as those who were invited, due to low attendance rates in some cases.</td>
</tr>
<tr>
<td>2) Invited participants included a diverse pool of stakeholders representing a wide range of sectors.</td>
<td>2) At some sessions, staff and our team noted unequal participation from participants, potentially due to issues of gender or professional diversity within a given group.</td>
</tr>
<tr>
<td>3) The focus groups provided large amounts of information and feedback to the NC Sea Grant planning team in a short amount of time, and fostered conversation among key stakeholders.</td>
<td>3) Participant confusion over defining topical focus areas vs. functional goals may have made weakened some of the focus group results.</td>
</tr>
<tr>
<td>4) Holding stakeholder focus groups removes the middle man (information being passed from community member to extension staff to executive staff), and creates additional avenues for information sharing.</td>
<td></td>
</tr>
</tbody>
</table>

### Recommendations

1) Consider holding some stakeholder events outside of typical business hours at neutral locations accessible to diverse sectors of the community, and avoid scheduling near holidays. This may improve attendance rates and increase the diversity of sector representation.

2) The writing team should discuss ways to incorporate diversity into the strategic plan. This may include consideration of what NC Sea Grant’s definition of diversity should be when planning how to reach a broader constituency with their work, and whether there are any specific groups that staff hope to better serve in their outreach and research programs.

3) Distinguish between functional and topical priorities when soliciting feedback or guiding discussions of plan content.

4) In future focus groups, distribute brief follow-up surveys to all participants, as well as to invitees who did not attend. Staff can use these surveys to gain additional insight on the effectiveness of the focus groups, as well as to assess challenges that prevented stakeholders from attending.

5) In the future, consider holding one inland focus group specifically for academic stakeholders. This will allow NC Sea Grant to collect critical feedback from academic partners and researchers, while preventing them from dominating the conversation at the expense of other groups.
## Public Feedback / Survey

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) There has been a concerted effort to improve the survey instrument from the 2012 to 2016 Strategic Planning Survey, including questions and formatting.</td>
<td>1) There are tradeoffs for each survey type including but not limited to cost, types of questions that can be asked, and good response rates. It will be challenging for staff to decide which type of survey would be most applicable given their resources and their priorities for the survey.</td>
</tr>
<tr>
<td>2) Management staff have been working with polling experts to determine the best sampling frame and guarantee that the 2016 survey will be more representative of North Carolinians than the 2012 survey.</td>
<td>2) The lack of good analysis and reporting for the 2012 survey makes it difficult to address and compare trends between the 2012 and 2016 surveys, which may be useful for understanding how priority issues have shifted over time and why.</td>
</tr>
<tr>
<td>3) Staff are strategically using the survey to gain feedback from more individuals than previous planning processes, which will help NC Sea Grant gain perspectives from new and different groups of people.</td>
<td>3) Securing the resources needed to analyze the 2016 survey data and write the survey report will be difficult because NC Sea Grant staff are already extremely busy and are working on a number of different projects.</td>
</tr>
</tbody>
</table>

## Recommendations

1) Work with polling experts to determine the best sampling frame for the survey in its current format—online. However, if polling experts insist that the type of representation NC Sea Grant is looking for is not possible with an online survey, we suggest considering a mixed-methods approach using both mail and online surveys as a way to minimize costs and increase the robustness of the sampling frame. There are statistical challenges associated with using two different types of surveys, but this option might better address NC Sea Grant’s needs and priorities for the survey.

2) Consider assigning a staff member (or two) the responsibility of analyzing and summarizing survey data as soon as possible. It is important for whoever is responsible for those products to be involved with the survey for the rest of development and implementation.

3) Calculate or analyze the following data in order to successfully inform the strategic plan and general public and stakeholder engagement efforts.
   a) Response rate (overall survey and individual questions)
   b) Demographic data compared to intended sample frame
   c) Residency and zip code data compared to the priority issues under each focus areas.
   d) Residency, zip code, and occupation data compared to familiarity with NC Sea Grant and/or use of NC Sea Grant resources
4) Following the survey, produce a thorough survey report on the priority issues identified by the broader North Carolina public to help inform the strategic plan. In addition, we recommend the creation of a short summary that can be distributed to survey participants and interested stakeholders in order to strengthen the lines of communication and engagement with stakeholders and the general public.

We acknowledge that given the timing of our collaboration with NC Sea Grant, some of the recommendations will be more useful for future strategic planning processes than for the current process (particularly recommendations related to focus groups, which have concluded for the current planning process). We hope that this report and the recommendations listed above prove useful not only for NC Sea Grant’s writing and review of the 2018-2021 plan, but also for other projects and stakeholder and general public engagement initiatives staff may undertake.
References


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Appendices

Appendix A: NC Sea Grant Organizational Chart
Appendix B: 2012 NC Sea Grant Strategic Planning Survey
Appendix C: Pretest Script
Appendix D: 2016 Survey Instrument
Appendix E: Strategic Planning Survey Data Coding Sheet
Appendix A: NC Sea Grant Organizational Chart
Appendix B: 2012 NC Sea Grant Strategic Planning Survey

Q1: Please check all boxes that describe you.

__ Coastal NC resident
__ Inland NC resident
__ Resident of another state
__ Coastal vacation homeowner
__ Business owner
__ Recreational angler
__ Commercial fisherman
__ Charterboat or Fishing Guide
__ Power boater
__ Paddler
__ Retired
__ University researcher
__ Teacher/Educator
__ Student
__ Government employee
__ Elected or appointed official
__ NC Sea Grant Advisory Board

Q2: Sea Grant funds research and conducts outreach on many coastal and marine topics. Please rate the importance of the following issues (very high, high, medium, low, and very low).

_______ Safe and Sustainable Seafood Supply
_______ Sustainable Coastal Communities
_______ Hazard Resilience for Coastal Communities
_______ Healthy Coastal Ecosystems
_______ Coastal Effects of Climate Change
_______ Environmental Literacy for All Ages

Q3: SUSTAINABLE COASTAL DEVELOPMENT Healthy coastal economies – working waterfronts, recreation and tourism, coastal access. Protect the resources needed to sustain coastal ecosystem and quality of life. Balance multiple uses (social, economic and environment) of resources and optimize environmental sustainability. PLEASE ADD ADDITIONAL SUB-TOPICS IN BOX BELOW:
Q4: SAFE AND SUSTAINABLE SEAFOOD SUPPLY A sustainable supply of safe seafood to meet public demand. A healthy domestic seafood industry. Informed consumers who understand the importance of sustainable harvesting, who appreciate the health benefits of seafood consumption and understand how to evaluate the safety of seafood products. PLEASE ADD ADDITIONAL SUB-TOPICS IN BOX BELOW:

Q5: HAZARD RESILIENCE IN COASTAL COMMUNITIES Widespread understanding of the risks associated with living, working and doing business on the coast. Community capacity to prepare for and respond to hazardous events. Effective response to coastal catastrophes. PLEASE ADD ADDITIONAL SUB-TOPICS IN BOX BELOW:

Q6: HEALTHY COASTAL ECOSYSTEMS Sound scientific information to support ecosystem-based approaches to managing the coastal environment. Use of ecosystem-based approaches to managing land, water and living resources in coastal areas. An educated public who understand the importance of ecosystem health and sustainable harvesting of finfish and shellfish. Restored function and productivity of degraded ecosystems. PLEASE ADD ADDITIONAL SUB-TOPICS IN BOX BELOW:

Q7: What is the single most important issue facing North Carolina's coast?

Q8: Please use the box below to add any comments concerning North Carolina's Sea Grant Program Thank you very much for your valuable input! If you would like more information, please call the Raleigh Sea Grant office at (919) 515-2454 or go online to www.ncseagrant.org
Appendix C: Pretest Script

Welcome, thanks for coming today and agreeing to participate in this discussion. If you haven’t already, please read and sign the consent forms that we have passed out. We will collect them from you before you start the survey.

The purpose of this focus group is to pretest a survey instrument that we created for North Carolina Sea Grant as part of our Master’s Project. The survey, which is part of NC Sea Grant’s strategic planning process for 2018-2022, is designed to elicit the opinions of North Carolina residents about coastal issues and priorities. Information from this focus group and the survey will be used to improve the clarity and effectiveness of the survey and provide preliminary data. Your responses and comments will not be connected to you in any way.

We have emailed each of you a link to the survey, please locate that email. You will have as long as you need to complete the survey. Feel free to help yourself to pizza, but note that we need to record how long the survey takes to complete. So, please avoid taking breaks to get food while taking the survey (but feel free to grab more once you’re done).

(Pass out paper surveys). Here is a paper version of the survey you will be completing. Feel free to make notes on clarity or confusing questions as you are completing the online survey. However, we will also be giving you 10-15 minutes after the survey to jot down any additional notes on your paper survey. Does everyone have the link and is ready to take the survey? Please begin.

(After it looks like all the surveys have been completed, read the following questions to them).

1) Did you feel that the instructions provided were clear? Did you understand what you were being asked to do, and why?
2) Were any questions particularly unclear or confusing?
3) Did you have any problems understanding what kind of answers were expected for each question?

Please take 10-15 minutes to write any additional notes in regards to these questions on your paper survey.

(After individual notes have been taken).

We will read all of the comments you provided on your written copy of the survey. But in our remaining time, we’d like to discuss your overall experience and any parts of the survey which you felt were problematic.
(Go through the below questions one at a time).

1) Did anyone have any technical problems with the online version of the survey? (if so, be sure to note what type of device they used, and ask what browser they accessed it from).
2) Did you feel that the instructions provided were clear? Did you understand what you were being asked to do, and why?
3) Were any questions particularly unclear or confusing?
4) Did you have any problems understanding what kind of answers were expected for each question?

If you have any remaining questions or comments, please feel free to email them to us. In the meantime, thank you for participating and supporting our project. We’ll be sending you some follow-up information by email if anyone would like to learn more about North Carolina Sea Grant and their projects and publications.
Appendix D: Survey Instrument

North Carolina Sea Grant Strategic Planning Survey (March 24th Version)

Thank you for participating in this survey! The results will be used to help North Carolina Sea Grant staff assess the priorities of North Carolina residents about coastal issues. This is part of an ongoing strategic planning process, which will help guide how North Carolina Sea Grant allocates time and resources in the coming years.

It is expected to take ~15-20 minutes. There are no correct or incorrect responses, so please feel free to express your opinions. You are free to skip any questions or stop at any time. The answers you give will be confidential – the research team will not be able to connect the information you provide with your name or email address.

Q1 How would you describe your current familiarity with North Carolina Sea Grant?
   __ I have never heard of North Carolina Sea Grant before this survey (1)
   __ I've heard of North Carolina Sea Grant but don't know anything about it (2)
   __ I'm moderately familiar with North Carolina Sea Grant (3)
   __ I'm very familiar with North Carolina Sea Grant (4)

About North Carolina Sea Grant:

Founded in 1970, North Carolina Sea Grant provides research, education and outreach opportunities relating to current issues affecting the North Carolina coast and its communities. Headquartered at North Carolina State University in Raleigh, we also have offices in Manteo, Morehead City, and Wilmington.

Through a combination of federal and state dollars, we facilitate university-based research to answer complex questions about the state’s diverse coastal ecosystems and meet the needs of coastal communities. Our initiatives and projects include a broad range of topics, including fisheries, seafood science and technology, water quality, aquaculture, community development, law and policy, and coastal hazards.
Q2 Currently, what do you think should be the most important focus areas to concentrate North Carolina Sea Grant's resources and time on? Please rank from 1 to 5, with 1 being most important.

_____ Fisheries & Aquaculture: Providing expert assistance to help coastal communities to sustain commercial fishing livelihoods and recreational fishing culture, reduce bycatch, and encourage the long-term health of our fisheries and fishing industries. (1)

_____ Sustainable Communities: Helping communities to understand coastal science so they can make sound policy, business, and economic decisions that reflect increasing demands on limited coastal resources. (2)

_____ Healthy Coastal Watersheds: Facilitating research and outreach related to North Carolina's waterways and natural resources and the impacts of changing land-use patterns, development, and increasing population. (3)

_____ Coastal Hazards: Building stakeholders' understanding of the forces that influence coastal processes, in order to address threats and damage from severe storms, hurricanes, and eroding shorelines. (4)

_____ Education & Training: Developing the skills of students and citizens so that the state can meet the future - and changing - demands of the workplace as they relate to Sea Grant's focus areas. (5)

Q3 Over the next five years, what do you think should be the most important focus areas to concentrate North Carolina Sea Grant's resources and time on? Please rank from 1 to 5, with 1 being most important.

_____ Fisheries & Aquaculture: Providing expert assistance to help coastal communities to sustain commercial fishing livelihoods and recreational fishing culture, reduce bycatch, and encourage the long-term health of our fisheries and fishing industries. (1)

_____ Sustainable Communities: Helping communities to understand coastal science so they can make sound policy, business, and economic decisions that reflect increasing demands on limited coastal resources. (2)

_____ Healthy Coastal Watersheds: Facilitating research and outreach related to North Carolina's waterways and natural resources and the impacts of changing land-use patterns, development, and increasing population. (3)

_____ Coastal Hazards: Building stakeholders' understanding of the forces that influence coastal processes, in order to address threats and damage from severe storms, hurricanes, and eroding shorelines. (4)

_____ Education & Training: Developing the skills of students and citizens so that the state can meet the future - and changing - demands of the workplace as they relate to Sea Grant's focus areas. (5)
Q4 If you ranked focus areas differently for the past two questions (where to focus resources now vs. where to focus them over the next five years), why do you think priorities should change?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

We will now ask you to consider priority topics within each of the five focus areas described previously, regardless of which categories you have already selected as more important.

Q5 Fisheries & Aquaculture: Providing expert assistance to help coastal communities to sustain commercial fishing livelihoods and recreational fishing culture, reduce bycatch, and encourage the long-term health of our fisheries and fishing industries.

Within the focus area "Fisheries & Aquaculture," please indicate which issues are the most important for North Carolina Sea Grant to focus their time and resources on over the next five years. Select up to 3.

[ ] Marketing North Carolina Seafood (1)
[ ] Mercury Levels in Seafood (2)
[ ] Fishery Regulations (3)
[ ] Working Waterfronts (4)
[ ] Sustainable Fishing Practices (5)
[ ] Sustainable Aquaculture Practices (6)
[ ] Education (7)
[ ] Innovative Gear and Techniques (8)
[ ] Informed Consumers (9)
[ ] Water Quality (10)
[ ] Ecosystem-Based Management (11)
[ ] Commercial and Recreational Catch Limits (12)
[ ] Other: (13) ____________________
Q6 Sustainable Communities: Helping communities to understand coastal science so they can make sound policy, business, and economic decisions that reflect increasing demands on limited coastal resources.

Within the focus area "Sustainable Communities" please indicate which issues are the most important for North Carolina Sea Grant to focus their time and resources on over the next five years. Select up to 3.

___ Tourism (1)
___ Recreation (2)
___ Coastal Access (3)
___ Aquaculture (4)
___ Land-use Planning/Zoning (5)
___ Resource Protection (6)
___ Commercial/Recreational Fishing (7)
___ Communication with Different Levels of Government (8)
___ Communication with the Public (9)
___ Energy Development (10)
___ Public Policy Participation (11)
___ Affordable Housing (12)
___ Preserving Cultural Heritage (13)
___ Job Creation (14)
___ Other: (15) ____________________
Q7 Coastal Hazards: Building stakeholders' understanding of the forces that influence coastal processes, in order to address threats and damage from severe storms, hurricanes, and eroding shorelines.

Within the focus area "Coastal Hazards" please indicate which issues are the most important for North Carolina Sea Grant to focus their time and resources on over the next five years. Select up to 3.

___ Building and Design Standards (1)
___ Community Vulnerability Assessment (2)
___ Beach Nourishment (3)
___ Coastal Storms (4)
___ Flooding (5)
___ Seawalls & Hardened Structures (6)
___ Living Shorelines (7)
___ Erosion (8)
___ Recreational Beach Safety (9)
___ Property Insurance (10)
___ Community Adaptation to Coastal Hazards (11)
___ Other: (12) ____________________

Q8 Healthy Coastal Watersheds: Facilitating research and outreach related to North Carolina's waterways and natural resources and the impacts of changing land-use patterns, development, and increasing population.

Within the focus area "Healthy Coastal Watersheds" please indicate which issues are the most important for North Carolina Sea Grant to focus their time and resources on over the next five years. Select up to 3.

___ Habitat Conservation (1)
___ Human Health Impacts (2)
___ Water Quality (3)
___ Invasive Species (4)
___ Fisheries Management (5)
___ Resource Protection (6)
___ Water Quantity (7)
___ Coastal Development (8)
___ Ecosystem-Based Management (9)
___ Ecosystem Functions/Services (10)
___ Other: (11) ____________________
Q9 Education & Training: Developing the skills of students and citizens so that the state can meet the future - and changing - demands of the workplace as they relate to Sea Grant's focus areas.

Within the focus area "Education & Training" please indicate which issues are the most important for North Carolina Sea Grant to focus their time and resources on over the next five years. Select up to 3.

__ Workforce Training (1)
__ University Fellowships (2)
__ Scientists Communicating Results (3)
__ Consumer Awareness (4)
__ In-school Education Programs (5)
__ Public Programs in Parks & Museums (6)
__ Property Owner Awareness (7)
__ Sustainable Business Practices (8)
__ Workforce Development (9)
__ Economic Development (10)
__ Other: (11) ____________________
Q10 What is your familiarity with each of the following North Carolina Sea Grant resources?

<table>
<thead>
<tr>
<th>Resource</th>
<th>I have never heard of this resource (1)</th>
<th>I am aware of this resource, but have never used it (2)</th>
<th>I occasionally read or use this resource (3)</th>
<th>I regularly read or use this resource (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastwatch Magazine (1)</td>
<td></td>
<td></td>
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<tr>
<td>North Carolina Sea Grant Newsletters (2)</td>
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<tr>
<td>Coastwatch Currents Blog (3)</td>
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<td>North Carolina Sea Grant Social Media (4)</td>
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<td>North Carolina Sea Grant Website (5)</td>
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<td>North Carolina Sea Grant Email Listserv (6)</td>
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</tbody>
</table>

Q11 *Coastwatch magazine is the flagship publication of North Carolina Sea Grant. This award-winning publication is a full-color magazine that is produced five times a year. Compelling articles and captivating photography highlight the latest in coastal science and technology, the experiences of North Carolina coastal communities, and an appreciation of coastal heritage.*

After reading the above description of Coastwatch magazine, would you be interested in subscribing to it?

___ Yes (1)
___ Maybe (2)
___ No (3)
Q12 Based on your answer to the previous question, why would you be interested or not interested in subscribing to Coastwatch magazine?

______________________________________________________________________________
______________________________________________________________________________

Q13 Where do you get your information about coastal issues? **Check all that apply.**

- Local TV News Stations (1)
- Newspapers (print) (2)
- Social Media (3)
- Online News Sources (4)
- Organizations (5)
- Local/State Government (6)
- Friends/Family (7)
- Academic Publications (8)
- North Carolina Sea Grant Resources (9)
- Other: (10) ____________________

Q14 What kind of resident do you consider yourself to be? **Check all that apply.**

- Coastal North Carolina resident (1)
- Inland North Carolina resident (2)
- Resident of another state (3)
- Coastal North Carolina vacation homeowner (4)

Q15 If you do not consider yourself primarily a coastal resident, how often do you visit coastal North Carolina? **Check one.**

- Never (1)
- Less than once a year (2)
- Once a year (3)
- 2-4 times a year (4)
- 5 or more times a year (5)
Q16 What types of coastal activities do you participate in? **Check all that apply.**
__ Fishing (1)
__ Sailing (2)
__ Powerboating (3)
__ Scuba Diving/Snorkeling (4)
__ Kayaking or Canoeing (5)
__ Surfing (6)
__ Beachgoing (7)
__ Birding (8)
__ Hiking (9)
__ Paddleboarding (10)
__ Swimming (11)
__ Biking (12)
__ Visiting Coastal Parks (13)
__ Visiting Local Historical or Cultural Sites (14)
__ Crabbing (15)
__ Beachcombing (16)
__ Enjoying Local Seafood (17)
__ Other (18) ____________________

Q17 Provide the zip code for the area in which you primarily reside.

__________

Q18 Please describe your occupation.

_______________________

Q19 What year were you born in?

_______

Q20 What is your gender? **Check one.**
__ Female (2)
__ Male (1)
__ Other (3)
Q21 What was your approximate annual household income before taxes last year? **Check one.**
___ Less than $19,999 (1)
___ $20,000 to $59,999 (2)
___ $60,000 to $99,999 (3)
___ $100,000 to $139,999 (4)
___ $140,000 or more (5)

Q22 What is the highest level of education you have completed? **Check one.**
___ Some high school, no diploma (1)
___ High school diploma or equivalent (2)
___ Some college, no degree (3)
___ Associate Degree (4)
___ Bachelor's Degree (5)
___ Master's Degree (6)
___ Doctorate Degree (7)

Q23 If you have any additional comments concerning North Carolina Sea Grant programming, please feel free to include them below.

____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

______________________________  _________________________________
Appendix E: Strategic Planning Survey Data Coding Sheet

Universal Codes
N- Item nonresponse

<table>
<thead>
<tr>
<th>Question</th>
<th>ID</th>
<th>Code/Answer Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>familiar</td>
<td>1- Never heard of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2- Heard of, but don’t know</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3- Moderately familiar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4- Very familiar</td>
</tr>
<tr>
<td>2</td>
<td>currentfish</td>
<td>Rank (1-5) in the column specific to each focus area</td>
</tr>
<tr>
<td></td>
<td>currentcomm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>currentwatershed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>currenthazard</td>
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<tr>
<td></td>
<td>currenttraining</td>
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</tr>
<tr>
<td>3</td>
<td>futurefish</td>
<td>Rank (1-5) in the column specific to each focus area</td>
</tr>
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<td></td>
<td>futurecomm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>futurewatershed</td>
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<tr>
<td></td>
<td>futurehazard</td>
<td></td>
</tr>
<tr>
<td></td>
<td>futuretraining</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>rankdifference</td>
<td>Open-ended – develop categories after results are collected</td>
</tr>
<tr>
<td>5</td>
<td>fishmarketing</td>
<td>For this “check three” question:</td>
</tr>
<tr>
<td></td>
<td>fishmercury</td>
<td>0- for each variable that has been left blank</td>
</tr>
<tr>
<td></td>
<td>fishregs</td>
<td>1- for each variable that has been checked</td>
</tr>
<tr>
<td></td>
<td>fishwaterfront</td>
<td>There will be a separate column for ‘other’ text.</td>
</tr>
<tr>
<td></td>
<td>fishsustainable</td>
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</tr>
<tr>
<td></td>
<td>fishaqua</td>
<td></td>
</tr>
<tr>
<td></td>
<td>fisheduction</td>
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<tr>
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<td>fishgear</td>
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<td>fishconsumers</td>
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<td></td>
<td>fishquality</td>
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<td>fisheco</td>
<td></td>
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<tr>
<td></td>
<td>fishcatch</td>
<td></td>
</tr>
<tr>
<td></td>
<td>fishother</td>
<td></td>
</tr>
</tbody>
</table>
| 6 | commtourism  
|   | commrec  
|   | commaccess  
|   | commaquac  
|   | commlanduse  
|   | commprotect  
|   | commfish  
|   | commgov  
|   | commpublic  
|   | commenergy  
|   | commpolicy  
|   | commhouse  
|   | commculture  
|   | commjob  
|   | commother  
|   |  
|   | For this “check three” question:  
|   | 0- for each variable that has been left blank  
|   | 1- for each variable that has been checked  
|   | There will be a separate column for ‘other’ text.  

| 7 | hazardbuild  
|   | hazardassess  
|   | hazardnourish  
|   | hazardstorm  
|   | hazardflood  
|   | hazardseawall  
|   | hazardliving  
|   | hazarderosion  
|   | hazardsafety  
|   | hazardinsurance  
|   | hazardadapt  
|   | hazardother  
|   |  
|   | For this “check three” question:  
|   | 0- for each variable that has been left blank  
|   | 1- for each variable that has been checked  
|   | There will be a separate column for ‘other’ text.  

| 8 | watershedhabitat  
|   | watershedhealth  
|   | watershedquality  
|   | watershedinvasive  
|   | watershedfish  
|   | watershedprotect  
|   | watershedquantity  
|   | watersheddevelop  
|   | watershedecomanage  
|   | watershededecoservice  
|   | watershededother  
|   |  
|   | For this “check three” question:  
|   | 0- for each variable that has been left blank  
|   | 1- for each variable that has been checked  
|   | There will be a separate column for ‘other’ text.  

93
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **9** | trainingwork  
trainingfellow  
trainingscience  
trainingconsumer  
trainingschool  
trainingpublic  
trainingproperty  
trainingbusiness  
trainingworkdevelop  
traininggeconomic |
| **For this “check three” question:** | 0- for each variable that has been left blank  
1- for each variable that has been checked  
*There will be a separate column for ‘other’ text.* |
| **10** | resourcecoast  
resourcenews  
resourceblog  
resourcessocial  
resourcemail |
| | 1- Never heard of  
2- Aware, but never used  
3- Occasionally use  
4- Regularly use |
| **11** | coast |
| | 1- Yes  
2- Maybe  
3- No |
| **12** | interestcoast |
| | Open-ended – develop categories after results are collected |
| **13** | infotv  
inforprint  
infosocial  
infoonline  
infoorg  
infogov  
inffriend  
infinpub  
infooncsg  
infoother |
| **For this “check all that apply” question, enter:** | 0- for each variable that has been left blank  
1- for each variable that has been checked off  
*There will be a separate column for ‘other’ text.* |
| **14** | residentcoast  
residentinland  
residentstate  
residentsvacation |
| **For this “check all that apply” question, enter:** | 0- for each variable that has been left blank  
1- for each variable that has been checked off |
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **visit** | **1-** Never  
**2-** Less than once a year  
**3-** Once a year  
**4-** 2-4 times a year  
**5-** 5 or more times a year |   |
| **recfish** | **recsail** | **recboat**  
**recdive** | **reckayak** | **recsurf**  
**recbeachgo** | **recbird**  
**rechike** | **recpaddle** | **recswim** | **recbike**  
**recpark** | **recesite**  
**reccrab** | **recbeachcomb**  
**recseafood** | **recother** |
| **For this “check all that apply” question, enter:**  
**0-** for each variable that has been left blank  
**1-** for each variable that has been checked off  
**There will be a separate column for ‘other’ text.** |   |
| **zipcode** | continuous |   |
| **occupation** | Open-ended – develop categories after results are collected  
| **year** | continuous |   |
| **gender** | **1-** Male  
**2-** Female  
**3-** Other |   |
|   | income                          | 1- Less than $19,999  
|   |                                | 2- $20,000 to $59,999  
|   |                                | 3- $60,000 to $99,999  
|   |                                | 4- $100,000 to $139,999  
|   |                                | 5- $140,000 or more  
| 22 | education                      | 1- Some high school, no diploma  
|   |                                | 2- High school diploma or equivalent  
|   |                                | 3- Some college, no degree  
|   |                                | 4- Associate Degree  
|   |                                | 5- Bachelor’s Degree  
|   |                                | 6- Master’s Degree  
| 23 | finalcomment                   | Open-ended – develop categories after results are collected  

***The numerical codes in the right column were based off of Qualtrics’ output report. However, the IDs in the middle column will need to be added to the output report in order to replace the less obvious IDs that are automatically generated by Qualtrics.***