

FINAL EVALUATION PLAN

North Atlantic Right Whale Vessel Speed Rule Human Dimension Study

22 December 2020



New England Aquarium

Prepared for

**National Oceanic and Atmospheric Administration
Greater Atlantic Regional Fisheries Office
55 Great Republic Dr, Gloucester, MA 01930**



Prepared by

**Azura Consulting LLC
446 Trail View Lane, Garland, TX 75043**



Under Subcontract to

**Alaska BioMap Inc.
P.O. Box 210696, Auke Bay, AK 99821**



ACRONYMNS AND ABBREVIATIONS

Azura	Azura Consulting LLC
DMA	Dynamic Management Area
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OMB	Office of Management and Budget
SMA	Seasonal Management Area
US	United States

TABLE OF CONTENTS

Introduction.....	3
Background.....	3
Objectives.....	4
Research Design.....	5
Research Methodology for Pleasure Vessels/Large Yachts (Year 1).....	5
Data Collection.....	5
Research Methodology for Large Ocean-Going Vessels (Year 2).....	6
Data Collection.....	6
Data Management & Analyses.....	6
Proposed Results.....	7
Appendix A: Public Burden Statement.....	8
Appendix B: Pleasure Vessel Survey.....	9
Appendix C: Ocean-going Vessel Focus Group Plan.....	17
Literature Cited.....	21

INTRODUCTION

BACKGROUND

The North Atlantic right whale (*Eubalaena glacialis*, hereafter referred to as “right whale”) remains one of the most endangered large whales in the world with an estimated population size of approximately 400 individuals and fewer than 100 reproductive females (Pettis et al. 2020). This species ranges widely across the Northwest Atlantic Ocean mostly along the United States (US) and Canadian coasts. Generally, they travel along the coast annually moving between the northern portions of the range where they feed and the southern portions, which support calving and breeding (Brown 1986; Winn et al. 1986; Jefferson et al. 2015).

Despite decades of protection, a combination of anthropogenic impacts and low calving rates continue to impede recovery of this species. Currently, the most significant threats to right whale survival include entanglement in fishing gear and collisions with vessels (Knowlton and Kraus 2001). Between 2003 and 2018, 43 mortalities documented between Florida and the Gulf of St. Lawrence were due to entanglement and vessel strikes (Sharp et al. 2019).

In 2008, to reduce the risk of vessel strike from large vessels, the National Marine Fisheries Service (NMFS) implemented a rule (hereafter “[speed rule](#)”) requiring most vessels equal to or greater than 65 feet in length to transit at speeds of 10 knots or less in designated Seasonal Management Areas (SMAs). Ten SMAs were designated along the US East Coast to coincide with temporal trends in right whale habitat use. Vessels exempt from the speed rule include vessels owned, operated or contracted by the federal government and vessels engaged in enforcement or search and rescue activities. Under limited circumstances, vessels subject to the rule may deviate from the speed restriction to maintain safe maneuvering speeds.

In addition to the mandatory speed rule, NMFS implements the voluntary [Dynamic Management Area \(DMA\) and Right Whale Slow Zones programs](#) to provide protection for right whale aggregations that may form outside of designed SMA boundaries. The DMA program was first launched with the speed rule. A DMA is triggered when a group of three or more right whales are sighted in close proximity. Following the trigger, NMFS establishes a 15-day DMA boundary around the area where the whales were sighted and encourages vessels > 65 feet in length either to avoid the area or transit through at speeds of 10 knots or less. DMAs may be extended if whales remain in the area. In 2020, NOAA launched the Right Whale Slow Zone program. Right Whale Slow Zones are triggered by both right whale visual sightings (i.e., DMAs) and confirmed detections from acoustic receivers. Under this program, NMFS provides maps and coordinates to vessel operators indicating areas where right whales have been detected. Mariners are encouraged to avoid these areas or reduce speeds to 10 knots or less while transiting through these areas for 15 days.

In 2013, after removing the “[sunset clause](#)” from the speed rule designed to protect right whales, NMFS committed to publish and seek comment on a report evaluating the conservation value and economic and navigational safety impacts of the rule. This report has not yet been published. Preliminary results indicate varying levels of compliance across areas (both SMAs and DMAs along the US East Coast) and vessel type. For example, large pleasure vessels and ocean-going containers and tankers exhibited the highest rate of noncompliance with the SMAs during 2018 and 2019, particularly in the SMAs off New York and from North Carolina to Georgia (NMFS unpublished data).

Successful compliance and cooperation with mandatory and voluntary right whale vessel-speed

measures require vessel operator awareness and comprehension. To this end, NMFS and its partners have developed a broad suite of initiatives to inform, educate, and hold vessel operators transiting through right whale habitat along the US East Coast accountable. These initiatives include enforcement actions (for mandatory measures), real-time awareness of right whale sightings, engagement with the professional maritime community, reminders in advance of seasonal restrictions, notices of dynamic actions, and corporate responsibility programs. While feedback regarding these measures indicates success in reaching some members of vessel communities, NMFS has not rigorously evaluated the effectiveness of outreach efforts related to compliance across regulated vessel communities. As noted above, preliminary vessel compliance data indicate a need to improve cooperation with right whale mandatory and voluntary vessel-speed measures. There is a need for better understanding the human dimension of compliance and cooperation, including what motivates and inhibits compliance and the effectiveness of outreach materials that announce and explain speed rules. Through investigation of target vessel communities, NMFS seeks to understand what efforts may enhance compliance and cooperation with mandatory and voluntary speed measures.

OBJECTIVES

Under subcontract to Alaska BioMap Inc., Azura Consulting (Azura) will investigate the ability and willingness of vessel operators to comply and cooperate with mandatory and voluntary speed reduction measures for right whales and to identify opportunities for enhancing the ability and willingness to comply. Based on preliminary analyses of compliance in SMAs and DMAs, NMFS has identified the two different target audiences for this study:

- 1) pleasure vessels/large yachts and
- 2) large ocean-going vessels (container ships, tankers, bulk carriers, cruise ships, vehicle carriers and general cargo vessels).

The main objectives of this human dimension study are to:

- Better understand factors that motivate compliance within specific vessel operator communities subject to speed rules/restrictions,
- Assess the effectiveness of various education and outreach methods/tools used to reach these vessel communities, and
- Determine if there are more applicable and effective communication and/or outreach methods/tools to enhance compliance with mandatory and voluntary speed restrictions/recommendations.

Our work plan for meeting these objectives is described in this Evaluation Plan. We will use social science methods to evaluate how communication (i.e., how they receive and understand information about speed reduction efforts) and/or motivation (e.g., values or economic incentives) may influence the behavior of each of these target audiences. Based on the results of this study, we aim to recommend outreach/education efforts that may enhance compliance and cooperation with mandatory and voluntary speed measures.

RESEARCH DESIGN

The research design that we propose to use borrows from the fields of marketing (i.e., Theory of Planned Behavior) and environmental psychology to encourage responses that can illuminate why people choose to comply or not with speed rules (Kollmuss and Agyeman 2002; O'Bryhim and Parsons 2015; Drymon and Scyphers 2017; Acuña-Marrero et al. 2018; Montes et al. 2018). While our data collection instrument differs between the target audiences, the design of each is rooted in this methodology.

RESEARCH METHODOLOGY FOR PLEASURE VESSELS/LARGE YACHTS (YEAR 1)

Current data suggest that large pleasure vessels and yachts have low levels of compliance with the speed rules outlined in the above section. We propose using a structured survey to investigate why compliance levels are low in this audience and identify possible methods to increase these levels.

This survey will be administered online using a web-based platform (e.g., www.qualtrics.com or www.surveymonkey.com) and will target boaters who operate pleasure vessels/yacht greater than or equal to 65 feet in length off Savannah, Georgia and New York, New York. One survey is estimated to take 15-20 minutes to complete. We aim to receive approximately 500 surveys from each location; however, this number may change depending on the size of the total vessel operator population.

We will create a database of potential respondents by gathering any publicly available mariner owner/operator information and by contacting local boating businesses, yacht clubs, and harbor masters to solicit boater interest and contact information. To administer the survey, each person in the database will be contacted. Surveys completed in entirety will be analyzed to answer the research questions. Each section of the survey addresses one or more research goals directly or indirectly.

Data Collection

Although we would like to survey this target audience during the peak season of summer in 2021, the exact timing of data collection will depend on when we receive Office of Management and Budget (OMB) approval. NOAA will submit the surveys as a separate information collection to add to OMB Control #0648-0580 for review and clearance in accordance with the Paperwork Reduction Act of 1995. During the 60-day public comment period on this information request, we will conduct a pilot survey with 5-9 purposely chosen respondents who fit the desired demographic of our sample population and who agree to take the survey solely to provide comments and feedback. Once we receive all feedback, we will make any necessary changes to the survey during this public comment/review period.

Following OMB approval, we will contact everyone in the database of potential respondents. Anyone who begins the survey will answer 1-3 screening questions to confirm that they fit our target audience and ensure that we receive an appropriate and representative sample. All potential respondents will be contacted multiple times to complete the survey (first, to initially invite them to participate; second, to remind them to participate if they have not done so; and third, a final request and reminder to participate if they have not done so).

Data Collection Instrument: Surveys

The survey will begin with a Public Burden Statement (Appendix A). The survey itself (Appendix B) consists of six sections in order to evaluate respondent demographic information, boater experiences with right whales, how much boaters know about and value right whales, current knowledge of speed rules, attitudes around rule existence, and the livelihood and lifestyle of boaters. There will be one final open-ended question that offers respondents a place for all

additional comments.

RESEARCH METHODOLOGY FOR LARGE OCEAN-GOING VESSELS (YEAR 2)

To effectively evaluate large ocean-going vessel operators, we will conduct in-person focus groups of this target audience. (Note that if COVID-19 restrictions are still in place, these focus groups may be conducted virtually.) NMFS believes that focus groups are the most effective method for reaching this audience. We plan to conduct 8 focus groups of 5-8 members each in 8 locations near the SMAs. Although there are 10 SMAs, 3 of these are located off Massachusetts, so we believe that we can target users of these SMAs by conducting one focus group in Boston. The other anticipated focus group locations are as follows: Narragansett, Rhode Island; Cape May, New Jersey or Wilmington, Delaware; Norfolk, Virginia; Morehead City/Beaufort, North Carolina; Charleston, South Carolina; and Jacksonville, Florida.

Data Collection

In addition to the submitting the pleasure vessel surveys for OMB approval, NOAA will include a separate information collection for the ocean-going vessel focus groups for OMB approval under OMB Control #0648-0580. We will begin by piloting a focus group with fewer than 10 people by sending drafts of topics and questions to a sample of our target audience. We will revise topics and questions based on feedback from this pilot. Formal focus groups will be conducted sometime during Year 2 (9/14/2021 - 9/13/2022). Analysis will begin by compiling and sharing all data (e.g., notes, survey answers, group memory) with the focus group participants in order to give them the opportunity to review and provide comments. Any additional notes will then be typed and all recordings from focus groups will be transcribed. These data will collectively be analyzed to find common themes, key findings, and any areas of consensus.

Data Collection Instrument: Focus Groups

The focus groups will be structured as follows: introductions, possible short survey, discussion points, possible closing survey, and closing points (Appendix C). The introduction will include the Public Burden Statement (Appendix A). For these ocean-going vessel focus groups, our facilitators will use the following methods for the evaluations:

- Questions centered on understanding awareness, compliance (level of burden caused by speed measures, reasons for noncompliance, motivation to change compliance levels), and opportunities/ideas for improvement of regulations; and
- Screening/demographic questions will include frequency of vessel operation in said region to ensure adequate experience.

DATA MANAGEMENT & ANALYSES

We will input and manage the survey and focus group data in Microsoft Excel. All data files will be provided to NMFS in an accessible format. We will analyze the data using NVivo, a qualitative data analysis software which helps to uncover richer research insights and produce clearly articulated, defensible findings backed by rigorous evidence. This software allows us to centralize data from multiple sources (i.e., surveys and focus groups) in order to conduct the most in-depth analysis possible. Using this program, we are also able to organize and code the data in order to more quickly identify themes and trends. We can organize the people, places, and core metrics of our analysis as cases and link cases to attribute values such as age and gender to compare different groups in the data. We will also use this program to produce graphics and identify emerging topics and sentiment using specific queries to identify themes and draw conclusions.

PROPOSED RESULTS

We will prepare a final report summarizing our evaluation methods and findings. Detailed information in this report will include: sampling methods and strategy for implementation of evaluations, documented timeframes for which evaluations were implemented, number of solicitations vs. number of participants for the evaluations, and key outcomes outlining compliance limitations and opportunities for enhancing compliance and cooperation.

We anticipate that results will lead to an enhanced understanding of boater experiences with right whales, assess current knowledge and support of speed rules, evaluate how much boaters currently know about and value right whales, and bolster understanding of the livelihood and lifestyle of boaters. Additionally, challenges related to compliance may be uncovered allowing an opportunity for improving compliance motivation and ability. Using these results, we can determine how well boaters understand speed rules and what motivates boaters to comply with speed rules. Based on the results of the survey, we may also be able to draw connections between boater's sentiment toward right whales, boater's support of speed rules, and boater's lifestyle or livelihood. Based on results, we will create recommendations on how outreach materials can improve messaging strategies that increase compliance with speed rules.

APPENDIX A: PUBLIC BURDEN STATEMENT

Public Burden Statement for Pleasure Vessel Surveys

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0648-0580. Without this approval, we could not conduct this survey/information collection. Public reporting for this information collection is estimated to be approximately 15-50 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to NOAA Fisheries at: 55 Great Republic Drive, Suite 04-400, Gloucester, Massachusetts 01930, Attn: Jean Higgins, Protected Species Conservation Branch Chief, jean.higgins@noaa.gov.

Public Burden Statement for Ocean-Going Vessel Focus Groups

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0648-0580. Without this approval, we could not conduct this survey/information collection. Public reporting for this information collection is estimated to be approximately 2-2.5 hours, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to NOAA Fisheries at: 55 Great Republic Drive, Suite 04-400, Gloucester, Massachusetts 01930, Attn: Jean Higgins, Protected Species Conservation Branch Chief, jean.higgins@noaa.gov.

APPENDIX B: PLEASURE VESSEL SURVEY

Large whales, particularly North Atlantic right whales, are in danger from unintentional boat strikes along the US east coast. We are conducting a study to better understand boater knowledge and impressions of programs designed to reduce the likelihood of these collisions. This information will help us to improve the effectiveness of these programs and recognize where additional public outreach is needed.

Screening Questions

1. Do you have experience boating within 20 nautical miles of Savannah, Georgia and/or New York, New York?
 - a. Yes
 - b. *No (selecting this answer will end their survey)*
2. What size vessel do you typically operate?
 - a. Greater than or equal to 65 feet in length
 - b. Between 55 and 64 feet in length
 - c. Between 45 and 54 feet in length
 - d. Between 35 and 44 feet in length
 - e. *Less than 35 feet in length (selecting this answer will end their survey)*

Survey Questions

The first several questions will help NOAA Fisheries understand more about you and your boating experiences in these regions.

1. What is your age?
2. What is your main profession/occupation?
3. Please select the level of education you have completed.
 - a. No schooling completed
 - b. Nursery school to 8th grade
 - c. Some high school, no diploma
 - d. High school graduate, diploma or the equivalent (e.g., GED)
 - e. Some college credit, no degree
 - f. Trade/technical/vocational training
 - g. Associate degree
 - h. Bachelor's degree
 - i. Master's degree
 - j. Professional or doctorate degree
4. How many years have you lived in the region (if applicable)?
 - a. less than 1 year
 - b. 1-5 years
 - c. 5-10 years
 - d. 10+ years
5. What type(s) of vessels do you operate? Please select all that apply.
 - a. Center console/deck boat

- b. Cabin cruiser
 - c. Motor yacht
 - d. Sailboat
 - e. Other (please explain):
6. How many years of boating experience do you have?
 - a. less than 1 year
 - b. 1-5 years
 - c. 5-10 years
 - d. 10+ years
7. How many years of boating experience do you have along the US East Coast?
 - a. less than 1 year
 - b. 1-5 years
 - c. 5-10 years
 - d. 10+ years
8. How many years of boating experience do you have in this region?
 - a. less than 1 year
 - b. 1-5 years
 - c. 5-10 years
 - d. 10+ years
9. How frequently are you boating in this region during the months of November – April?
 - a. Daily
 - b. Weekly
 - c. Monthly
 - d. Fewer than 12 times
10. How frequently are you boating in this region during the months of May – October?
 - a. Daily
 - b. Weekly
 - c. Monthly
 - d. Fewer than 12 times
11. What is your most common transit speed when boating (outside of harbor areas)?
 - a. less than 8 knots
 - b. 8-10 knots
 - c. 10-15 knots
 - d. 15-20 knots
 - e. 20-30 knots
 - f. greater than 30 knots
12. When did you last take a boating safety course?
 - a. Less than 5 years ago
 - b. Greater than 5 years ago
 - c. Never
13. What type(s) of boating activities do you do in this region (please choose all that apply)?
 - a. Personal recreation (including recreational fishing)
 - b. Charter fishing

- c. Whale watching
- d. Commercial fishing
- e. Other (please explain):

The next set of questions will help NOAA Fisheries understand your experiences with large whales.

14. How often do you see large whales while boating?
 - a. Frequently
 - b. Sometimes
 - c. Rarely
 - d. Never
15. How often do you see large whales near your vessel?
 - a. Frequently
 - b. Sometimes
 - c. Rarely
 - d. Never
16. If you have seen large whales while boating, how often is it easy for you to safely avoid them without causing any harm to your vessel, you and your passengers, and the whale?
 - a. Frequently
 - b. Sometimes
 - c. Rarely
 - d. Never
 - i. If never, please explain why not:
17. Have you ever witnessed another vessel near a large whale? If yes, how often?
 - a. Frequently
 - b. Sometimes
 - c. Rarely
 - d. Never
18. (If a-c above) When you see another vessel near a large whale, how often do you feel that the vessel does everything in its power to keep the vessel, the passengers, and the whale safe?
 - a. Frequently
 - b. Sometimes
 - c. Rarely
 - d. Never
 - i. Please explain:
19. Have you ever seen a right whale while boating?
 - a. Yes
 - b. No
 - c. Maybe/I'm not sure if it was a right whale
20. If yes, did you report it?
 - a. Yes

- b. No
 - c. N/A
21. Have you heard of the following options for reporting whale sightings (please select all that apply)?
- a. Through a smartphone app (e.g., Whale Alert App, SEE & ID Dolphins & Whales, Dolphin & Whale 911, etc.)
 - b. US Coast Guard VHF Channel 16
 - c. NOAA's website
 - d. One of NOAA's Hotlines (e.g., 1-877-WHALE HELP, (866) 755-NOAA)
 - e. Other

The next set of questions will ask you about your opinions of right whales in particular.

For the following questions, please rate them on a scale of 1-5 (strongly disagree - disagree - neutral - agree - strongly agree).

- 22. I believe that right whales are ecologically important.
- 23. I value having right whales in the coastal waterways where I travel.
- 24. I appreciate that right whales are protected in eastern coastal waterways.
- 25. I know about right whales and/or would like to learn more about right whales as a species.
- 26. I would like to learn more about how to protect right whales in my region.

The next set of questions will ask you about the Seasonal and Dynamic Management Areas/Right Whale Slow Zones that were established to protect right whales. Learning more about how familiar you are with these conservation measures helps us understand how well we have been sharing and explaining them.

27. From which sources do you receive information regarding boating rules and regulations (please select all that apply)?
- a. US Coast Guard
 - b. Mariners
 - c. Local harbor masters
 - d. Other (please explain):
 - e. I do not receive information
28. How do you usually receive information regarding boating rules and regulations (please select all that apply)?
- a. Word of mouth
 - b. Flyers
 - c. Posters
 - d. Public meetings
 - e. Other (please explain):

- f. I do not receive information
29. Which nautical charts do you use when boating (please select all that apply)?
- a. NOAA Fisheries
 - b. The boat's chart plotter (Please share the model/manufacturer you use)
 - c. Private apps designed for nautical navigation (Please share the app you use)
 - d. Other (please explain):
30. Prior to this survey, were you aware of the mandatory 10-knot vessel speed restriction for most vessels, 65 feet or longer, in **Seasonal Management Areas**?
- a. Yes
 - i. How did you hear about the vessel speed restriction (please select all that apply)?
 1. Whale Alert app
 2. Nautical charts/Coast Pilot
 3. US Coast Guard (e.g., Local Notice to Mariners, Broadcast Notice to Mariners, VHF CH-16)
 4. NOAA Fisheries materials (e.g., handouts, forms, posters, port meetings)
 5. Shipping list serv
 6. Social media (e.g., Facebook: @NOAAFisheriesNEMA and Twitter: @NOAAFish_GARFO)
 7. Other (please explain):
 - b. No
 - i. Do you use any of the resources below (please select all that apply)?
 1. Whale Alert app
 2. Nautical Charts/Coast Pilot
 3. US Coast Guard (e.g., Local Notice to Mariners, Broadcast Notice to Mariners, VHF CH-16)
 4. NOAA Fisheries materials (e.g., handouts, forms, posters, Port meetings)
 5. NOAA Fisheries websites (e.g., weather buoys)
 6. Text messages
 7. An Email/Shipping List Serv
 8. Social Media (e.g., Facebook: @NOAAFisheriesNEMA and Twitter: @NOAAFish_GARFO, @NOAAFish_SERO)
31. Prior to this survey, were you aware of the voluntary 10-knot vessel speed requests made to all boats traveling in **Dynamic Management Areas/Right Whale Slow Zones that are triggered when a group of right whales is detected**?
- a. Yes

- i. How did you hear about the vessel speed measures (please select all that apply)?
 1. Whale Alert app
 2. Nautical Charts/Coast Pilot
 3. US Coast Guard (e.g., Local Notice to Mariners, Broadcast Notice to Mariners, VHF CH-16)
 4. NOAA Fisheries materials (e.g., handouts, forms, posters, Port meetings)
 5. NOAA Fisheries websites (e.g., weather buoys)
 6. Text messages
 7. An Email/Shipping List Serv
 8. Social Media (e.g., Facebook: @NOAAFisheriesNEMA and Twitter: @NOAAFish_GARFO, @NOAAFish_SERO)
 9. Other (please explain):
- b. No
 - i. Do you use any of the resources below (select all that apply):
 1. Whale Alert app
 2. Nautical Charts/Coast Pilot
 3. US Coast Guard (e.g., Local Notice to Mariners, Broadcast Notice to Mariners, VHF CH-16)
 4. NOAA Fisheries materials (e.g., handouts, forms, posters, Port meetings)
 5. NOAA Fisheries websites (e.g., weather buoys)
 6. Text messages
 7. An Email/Shipping List Serv
 8. Social Media (e.g., Facebook: @NOAAFisheriesNEMA and Twitter: @NOAAFish_GARFO, @NOAAFish_SERO)

32. How would you like to receive this type of information in the future?

- a. Whale Alert app
- b. Nautical Charts/Coast Pilot
- c. US Coast Guard (e.g., Local Notice to Mariners, Broadcast Notice to Mariners, VHF CH-16)
- d. NOAA Fisheries materials (e.g., handouts, forms, posters, port meetings)
- e. NOAA Fisheries websites (e.g., weather buoys)
- f. Text messages
- g. An Email/Shipping List Serv
- h. Social Media (e.g., Facebook: @NOAAFisheriesNEMA and Twitter: @NOAAFish_GARFO, @NOAAFish_SERO)
- i. Other (please explain):

The next set of questions will ask your opinion about the two types of speed protections currently in place to benefit right whales.

33. Seasonal Management Area regulations **require** most vessels greater than 65 feet in length to travel at 10 knots or less during certain times of year. Do you support this mandatory law?
- a. I support it, and it does not limit my boating activities in a negative way.
 - b. I support it, but it does limit my boating activities (e.g., limited economic gain personal gain, vessel safety constraints).
 - i. In what ways are your boating activities limited by this rule?
 - 1. Open-ended answer
 - c. I do not support it, but I would if it were modified.
 - i. In your opinion, how should the rule be modified (please select all that apply)?
 - 1. Speed limit should be higher than 10 knots
 - 2. Speed limit should apply to all boats greater than or equal to 16 feet in length
 - 3. Speed limit should apply to all boats greater than or equal to 26 feet in length
 - 4. Speed limit should apply to all boats greater than or equal to 40 feet in length
 - 5. Other (please explain)
 - d. I do not support it because (please select all that apply):
 - i. I do not think it is an effective way to prevent vessels from striking right whales.
 - ii. The speed limit negatively limits my boating activity.
 - iii. The speed limit does not apply to all boats (including those less than 65 feet in length).
 - iv. Other (please explain)
34. In Dynamic Management Areas/Right Whale Slow Zones, NOAA Fisheries asks all boaters to **voluntarily** reduce speeds to 10 knots or less in areas where right whales have recently been detected. Do you support these voluntary programs?
- a. I support them, I choose to slow my speed in these areas, and it does not limit my boating activities in a negative way.
 - b. I support them, but it does limit my boating activities (e.g., limited economic gain personal gain, vessel safety constraints).
 - i. In what ways are your boating activities limited by this rule?
 - 1. Open-ended answer
 - c. I do not support them, but I would if they were modified.
 - i. In your opinion, how should these voluntary programs be modified (please select all that apply)?
 - 1. Speed limit should be lower than 10 knots
 - 2. Speed limit should apply to all boats greater than or equal to 16 feet in length

3. Speed limit should apply to all boats greater than or equal to 26 feet in length
 4. Speed limit should apply to all boats greater than or equal to 40 feet in length
 5. Other (please explain)
- d. I do not support it and do not think it is an effective way to mitigate vessels from striking right whales.
- i. Why?
35. Are there any situations in which you are unwilling or unable to follow the vessel speed rules?
- a. Yes
 - i. Please explain
 - b. No

The next set of questions will ask you about how the speed rules impact your boating experiences.

For the following questions, please rate them on a scale of 1-5 (strongly disagree - disagree - neutral - agree - strongly agree).

36. Boating is very important to my lifestyle.
37. Boating and boating-related activities are one of the most enjoyable things that I do.
38. A large portion of my life is organized around boating and boating-related activities.
39. Boating contributes to a meaningful portion of my income.
40. Boating is very important to my livelihood in non-economic ways because it provides food, recreation, social benefits, etc.

Last Question!

41. Do you have any additional comments or suggestions? All comments are welcomed.

After last question:

Thank you for taking the time to complete this survey. Your input is valuable and will enhance efforts to support mariners and right whales across the region. If you have any questions, please feel free to contact Jean Higgins, Protected Species Conservation Branch Chief, jean.higgins@noaa.gov.

APPENDIX C: OCEAN-GOING VESSEL FOCUS GROUP PLAN

Logistics of Focus Groups (subject to change based on pilot)

- Roughly one focus group per SMA (SMAs very close together can combine audience)
- In person (if no COVID-19 restrictions)
- 6-8 people per group
- 2.5 hours long (including breaks)
- Snacks/beverages to be provided
- SWAG encouraged (NOAA Fisheries materials or handouts)
- Potential venues: hotel conference rooms, harbors, libraries
- Supplies needed beforehand:
 - Giant easels
 - Giant notepads
 - Markers
 - Name tag stickers
 - Description of speed rules (either on sheet of paper or a poster)
 - Printed agendas for participants
 - Printed detailed agendas for facilitator and note-taker
 - Pencils/pens
 - Recorder

Process Agenda

1. Schedule time to pick up coffee/food beforehand
2. Prepare room (e.g., arrange tables, chairs, flip charts, name tags, etc.), equipment (e.g., recorder), and supplies; set up welcome table (sign in sheet or consent form, distribute handouts, name tags)
 - a. Set up room so that participants face each other
3. Stand at welcome table and greet participants, introduce the facilitator and note-taker, point to refreshments, create a welcoming atmosphere
4. (25 min) Formally begin focus group
 - a. Call everyone to get settled and confirm everyone has signed the consent form (have note-taker bring form to anyone who has not signed)
 - b. Begin meeting (TURN RECORDER ON)
 - i. Facilitator introduction; note-taker introduction; make sure participants know that they can correct the note-taker at any time
 - ii. Description of focus groups in general; description of this focus group specifically; explain how participants will benefit from results
 - iii. Go over ground rules, ask participants if they have any they want to add, then have everyone verbally agree to ground rules
 - iv. Point out and explain “parking lot” note. When someone has questions or comments that are not directly related to the discussion currently happening or may be answered in the upcoming stages, the question/comment will be written on the parking lot note. At the end of the

- focus group, there will be time to revisit the parking lot note and make sure everything was addressed.
- v. Explain “group memory” document. After the focus group, all notes will be compiled. Stars will be put next to any item on a note of particular importance for the group memory; anyone can raise their hand to add a star next to a note; group memory will be created and distributed
 - vi. First note (created together with participants) is the expectations of the focus group; facilitator goes over what NOAA Fisheries’ expectations are, then asks group if they have anything to add, then everyone agrees or edits are made to reach agreement
 - vii. Ask for any clarification questions
 - 1. Facilitator can curb questions when necessary to stay on time; put any questions that seem like they will derail the group in the “parking lot”
 - c. (10 min) Group introductions
 - i. Name, affiliation, background and experience, possibly an icebreaker
 - d. (5 min) Possibly distribute opening survey
 - e. (90 min including one break) Moderator begins formal group questions/discussion (see below for details)
 - f. (20 min) Session debrief
 - i. Go over notes, ensure everything is captured accurately, ask for any additional stars (to emphasize importance when recording group memory)
 - ii. Answer final questions
 - iii. Possibly distribute closing survey
 - iv. Describe what will happen next (group memory created, notes typed up, all of this distributed to everyone involved), how “results” are figured out, what happens after results are found
 - v. Tell them how results will be dispersed to them and publicly available
 - vi. Say thank you!
 - vii. Hang out in the room until everyone leaves, LEAVE RECORDER ON during this time

Focus Group Discussion Topics

<i>Topic</i>	<i>Desired Outcomes</i>	<i>Process</i>	<i>Time</i>
Right Whales (in general, experience with, value of)	Learn how mariners interact with and feel about right whales	TBD (discuss; evaluate; suggest; brainstorm)	20 min
Speed Measure: Knowledge Allocation	Learn how much mariners already know about speed rules and where they receive information from	TBD (discuss; evaluate; suggest; brainstorm)	20 min
Speed Measure: Compliance Ability	Learn if mariners feel that they are currently able to comply	TBD (discuss; evaluate; suggest; brainstorm)	20 min
Speed Measure: Motivation to Comply	Learn why mariner's do or do not comply	TBD (discuss; evaluate; suggest; brainstorm)	20 min
Speed Measure: Challenges to Compliance	Learn about challenges that stand in the way of compliance	TBD (discuss; evaluate; suggest; brainstorm)	20 min
Finding Solutions	Determine a best-case scenario for all involved	TBD (discuss; evaluate; suggest; brainstorm)	15 min
Final Questions	Gather any final answers to help better evaluate research goals	TBD (discuss; evaluate; suggest; brainstorm)	5 min

Discussion Prompts (in order)

1. Right whale general knowledge, experiences, value
 - a. How many have seen a right whale before?
 - b. How do people feel about right whales?
 - c. What happens during a typical sighting or experience with a right whale?
2. Speed Measures: Knowledge Allocation
 - a. How many people knew about the speed measures before today? (raise of hands, record answers)
 - i. Ask for voluntary DMAs/Right Whale Slow Zones measures, SMAs speed rules
 - b. How do you normally learn about these types of measures?
 - c. Are they easy to understand?
 - d. Do you find it easy or difficult to keep up to date with the speed rules?
3. Speed Measures: Compliance Ability
 - a. How do you feel about the speed measures?
 - i. Is 10 knots a speed at which you can easily transit when necessary?
 - ii. Do the speed measures make your job harder? In what ways?

4. Speed Measures: Motivation to Comply
 - a. How do you feel about the overall goal of the speed rules?
5. Speed Measures: Challenges with Compliance
 - a. What challenges or issues do you face that we should know about?
 - b. Are any of those challenges that NOAA Fisheries can help solve?
6. Finding Solutions
 - a. Now that we have discussed the background, what is the best-case scenario?
7. Last Questions
 - a. Who else should we talk to about the right whale speed measures?

LITERATURE CITED

- Acuña-Marrero, D., R. de la Cruz-Modino, A.N. Smith, P. Salinas-de-León, M.D. Pawley, and M.J. Anderson. 2018. Understanding human attitudes towards sharks to promote sustainable coexistence. *Marine Policy* 91:122-128.
- Brown, S.G. 1986. Twentieth-century records of right whales (*Eubalaena glacialis*) in the northeast Atlantic Ocean. *Reports of the International Whaling Commission (Special Issue 10)*:121-127.
- Drymon, J.M. and S.B. Scyphers. 2017. Attitudes and perceptions influence recreational angler support for shark conservation and fisheries sustainability. *Marine Policy* 81:153-159.
- Jefferson, T.A., M.A. Webber, and R.L. Pitman. 2015. *Marine mammals of the world: A comprehensive guide to their identification*. Second edition. San Diego, California: Academic Press.
- Knowlton, A.R. and S.D. Kraus. 2001. Mortality and serious injury of northern right whales (*Eubalaena glacialis*) in the western North Atlantic Ocean. *Journal of Cetacean Research and Management (Special Issue 2)*:193-208.
- Kollmuss, A. and J. Agyeman. 2002. Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental education research* 8(3):239-260.
- Montes, N., R. Swett, S.K. Jacobson, and C. Sidman. 2018. Factors Influencing Recreational Boaters' Intentions to Comply with Right Whale Regulations in the Southeastern United States. *Society & Natural Resources* 31(4):473-488.
- O'Bryhim, J.R. and E. Parsons. 2015. Increased knowledge about sharks increases public concern about their conservation. *Marine Policy* 56:43-47.
- Pettis, H.M., R.M. Pace, III, and P.K. Hamilton. 2020. North Atlantic Right Whale Consortium 2019 Annual Report Card. Report to the North Atlantic Right Whale Consortium.
- Sharp, S.M., W.A. McLellan, D.S. Rotstein, A.M. Costidis, S.G. Barco, K. Durham, T.D. Pitchford, K.A. Jackson, P.Y. Daoust, T. Wimmer, E.L. Couture, L. Bourque, T. Frasier, B. Frasier, D. Fauquier, T.K. Rowles, P.K. Hamilton, H. Pettis, and M.J. Moore. 2019. Gross and histopathologic diagnoses from North Atlantic right whale *Eubalaena glacialis* mortalities between 2003 and 2018. *Diseases of Aquatic Organisms* 135(1):1-31.
- Winn, H.E., C.A. Price, and P.W. Sorensen. 1986. The distributional biology of the right whale (*Eubalaena glacialis*) in the western North Atlantic. *Reports of the International Whaling Commission (Special Issue 10)*:129-138.