

**NOAA CORAL REEF CONSERVATION PROGRAM
NATIONAL CORAL REEF MONITORING PROGRAM (NCRMP)
RESIDENT CORAL REEF SURVEY:
Puerto Rico
OMB CONTROL NUMBER 0648-0646**

Survey administered in (circle one): English or **Spanish**

[SCRIPT 1]

Hello, my name is _____, and I am working on behalf of the National Oceanic and Atmospheric Administration (NOAA). NOAA's National Coral Reef Monitoring Program is conducting surveys with residents of {jurisdiction} to learn how people interact with coral reefs and how perceptions of coral reef conditions in {jurisdiction} are changing over time. The information collected will be used to help management better serve local communities. Your household was randomly selected to participate in this survey.

S1. Just one person is needed to complete this survey. May I please speak to the person 18 or older in your household who has had the most recent birthday? (Note: If selected person is not available, choose the next eligible person available).

- The person who answered the door is eligible → *Continue to SCRIPT 2*
- New individual comes to the door → *Re-read SCRIPT 1 with new individual, then proceed to SCRIPT 2*
- No eligible persons available → *Proceed with "not available" protocol, thank the current individual, and end survey*
- The person declines → *Proceed with NR1*

[SCRIPT 2]

The survey should take no more than 20 minutes to complete. Your participation is voluntary, but is very important to the success of this study. You may skip any of the questions or stop the survey at any time. All information you provide is confidential. Your name and address will never be identified or associated with the results.

S2. Are you willing to participate in this survey?

- Yes (person agreed to be interviewed) → *Continue to S3*
- No (person did not agree to be interviewed) → *Proceed with nonresponse question NR1*

S3: Do you live in [jurisdiction] at least three months of the year?

- Yes (the person lives here for at least 3 months a year) → *Start survey*
- No (the person does not live here for at least 3 months a year) → *End survey*

NR1. Are there any particular reasons why you would prefer not to participate in the survey that you would be willing to share?

- Yes → *Allow respondent to comment and record reasons in NR2*
- No → *Thank the individual and end survey*

NR2. [For Interviewer] Did the respondent make any of the following comments, whether or not these exact words were used? (Check all that apply)

- I'm TOO BUSY/I don't have time (If this is a reason, ask for a convenient time to interview)
- I DO NOT LIKE surveys
- I am NOT INTERESTED
- Surveys are a WASTE OF TIME
- I DON'T TRUST surveys
- Surveys are an INVASION OF PRIVACY
- Unfavorable PAST EXPERIENCE with surveys
- Other reason

NR3. [For Interviewer] Please record the following observations during your interaction with the respondent.

- a. Gender of respondent: ___ Male ___ Female
- b. Age: ___ 18-29 ___ 30-49 ___ 50-69 ___ 70+
- c. Race:
- d. Presence of children in household

—BEGINNING OF SURVEY—

PARTICIPATION IN REEF ACTIVITIES

[SCRIPT] In this first section, we would like to understand your coastal and marine-based activities in Puerto Rico.

1. In the past 12 months, how many days did you participate in each of the following activities in Puerto Rico? Please answer "0" if you did not participate in the activity. {supports 'participation in reef activities' indicator}

	Number of Days
Swimming or wading	
Snorkeling	
SCUBA diving	
Free diving	
Waterside/beach camping	
Beach recreation (beach sports, picnics, etc.)	
Boating (sail, motor, jet ski)	
Paddling activities (kayaking, stand up paddle boarding)	
Surfing	
Fishing (including spearfishing)	
Gathering of marine resources (lobsters, conch, octopus, seaweed, shells, etc.)	

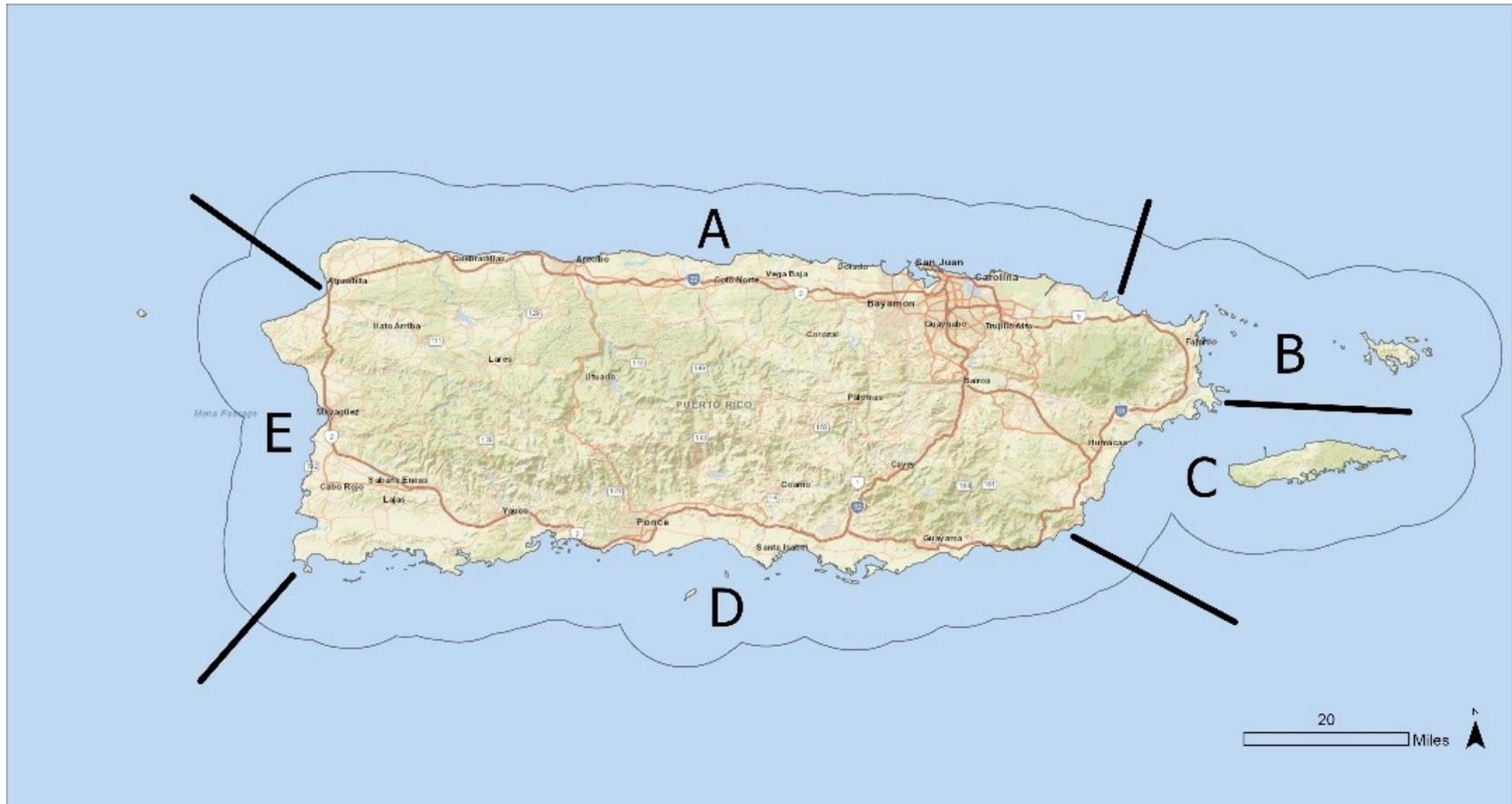
→ **SKIP LOGIC:** IF RESPONDENT DID NOT PARTICIPATE IN ANY ACTIVITIES (0 DAYS FOR ALL), SKIP TO Q4.

2. Please look at the map of Puerto Rico and the boundaries of each zone. For each activity, in which zone did you most often participate? {supports 'participation in reef activities' indicator}

(SHOW RESPONDENT APPROPRIATE MAP)

→ **SKIP LOGIC:** IF RESPONDENT DID NOT PARTICIPATE IN 'FISHING' OR 'GATHERING', SKIP TO Q4.

	Zone A	Zone B	Zone C	Zone D	Zone E	Check here if did not participate
[ASK IF POSITIVE VALUE IN Q1] Swimming or wading						
[ASK IF POSITIVE VALUE IN Q1] Snorkeling						
[ASK IF POSITIVE VALUE IN Q1] SCUBA diving						
[ASK IF POSITIVE VALUE IN Q1] Free diving						
[ASK IF POSITIVE VALUE IN Q1] Waterside/beach camping						
[ASK IF POSITIVE VALUE IN Q1] Beach recreation (beach sports, picnics, etc.)						
[ASK IF POSITIVE VALUE IN Q1] Boating (sail, motor, jet ski)						
[ASK IF POSITIVE VALUE IN Q1] Paddling activities (kayaking, stand up paddle boarding)						
[ASK IF POSITIVE VALUE IN Q1] Surfing						
[ASK IF POSITIVE VALUE IN Q1] Fishing (including spearfishing)						
[ASK IF POSITIVE VALUE IN Q1] Gathering of marine resources (lobsters, conch, octopus, seaweed, shells, etc.)						



3. Which of the following best describes your **primary** motivation for fishing and gathering? (Choose one). {supports 'participation in reef activities' indicator}

- 1 Recreational: I fish primarily for sport or pleasure, but may also sell a few fish.
- 2 Subsistence: I fish primarily to catch fish to feed myself, my family, and/or my community.
- 3 Commercial: I fish primarily for some or all of the money I make in one year.
- 4 Cultural: I fish primarily to keep traditional practices alive.

IMPORTANCE OF CORAL REEFS

[SCRIPT] For the next several questions, we would like to understand your household's reliance on seafood and the cultural importance of coral reefs in Puerto Rico.

4. On average, how many of the meals eaten within your household contain seafood? – INTERVIEWER STATES SCALE {supports 'cultural importance of reefs' indicator}

None of the meals (0%)	Some of the meals (1-33%)	Many of the meals (34-66%)	Most of the meals (67-99%)	All of the meals (100%)
1	2	3	4	5

➔ SKIP LOGIC: IF 'NONE OF THE MEALS', SKIP TO Q6.

5. On average, how many of the meals eaten within your household contain seafood from **local coral reefs** in Puerto Rico? (Examples include reef fish such as **parrotfish and hogfish**, bottomfish such as **snappers and groupers**, and other shellfish and marine life that depend on coral reefs such as **lobster, octopus, and conch**. This does not include pelagic fish such as **wahoo and mahi mahi**.) {supports 'cultural importance of reefs' indicator}

None of the meals (0%)	Some of the meals (1-33%)	Many of the meals (34-66%)	Most of the meals (67-99%)	All of the meals (100%)	Not Sure
1	2	3	4	5	NS

6. How important are coral reefs to each of the following in Puerto Rico? – INTERVIEWER REPEATS SCALE AS NEEDED {supports 'cultural importance of reefs' indicator}

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important	Not Sure
Culturally important events, such as feasts and ceremonies	1	2	3	4	5	NS

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important	Not Sure
Establishing and maintaining cultural and familial ties	1	2	3	4	5	NS
Ancestral connections	1	2	3	4	5	NS
Religious practices	1	2	3	4	5	NS
Local language (word choice, business and place names, etc.)	1	2	3	4	5	NS
Cultural folklore (beliefs, stories, etc.)	1	2	3	4	5	NS

PERCEIVED RESOURCE CONDITION

[SCRIPT] In the next few questions, you will be presented with a series of marine resources, and will be asked to rate how important they are to you, as well as their current conditions and how you think those conditions may change in the future.

7. How important are each of the following marine resources to your quality of life? - INTERVIEWER REPEATS SCALE AS NEEDED {supports 'perceived resource condition' indicator}

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important
Ocean water quality	1	2	3	4	5
Amount of live coral	1	2	3	4	5
Amount of fish	1	2	3	4	5
Diversity of fish	1	2	3	4	5
Diversity of corals	1	2	3	4	5

8. How would you rate the current condition of each of the following marine resources in Puerto Rico? - INTERVIEWER REPEATS SCALE AS NEEDED {supports 'perceived resource condition' indicator}

	Very Bad	Somewhat Bad	Neither Bad nor Good	Somewhat Good	Very Good	Not Sure
Ocean water quality	1	2	3	4	5	NS

	Very Bad	Somewhat Bad	Neither Bad nor Good	Somewhat Good	Very Good	Not Sure
Amount of live coral	1	2	3	4	5	NS
Amount of fish	1	2	3	4	5	NS
Diversity of fish	1	2	3	4	5	NS
Diversity of corals	1	2	3	4	5	NS

9. Over the next 10 years, how do you think the condition of each of those same marine resources will change in Puerto Rico? - INTERVIEWER REPEATS SCALE AS NEEDED {supports 'perceived resource condition' indicator}

	Worsen Greatly	Worsen Somewhat	No Change	Improve Somewhat	Improve Greatly	Not Sure
Ocean water quality	1	2	3	4	5	NS
Amount of live coral	1	2	3	4	5	NS
Amount of fish	1	2	3	4	5	NS
Diversity of fish	1	2	3	4	5	NS
Diversity of corals	1	2	3	4	5	NS

AWARENESS AND KNOWLEDGE OF REEFS AND REEF THREATS

[SCRIPT] This next section will ask about reef awareness and importance in Puerto Rico.

10. How important are coral reefs in Puerto Rico to each of the following? -INTERVIEWER REPEATS SCALE AS NEEDED {supports 'awareness and knowledge of reefs' indicator}

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important	Not Sure
Protection from natural disasters	1	2	3	4	5	NS
Outdoor recreation	1	2	3	4	5	NS
Food for coastal communities	1	2	3	4	5	NS
Tourism-based economy	1	2	3	4	5	NS
Fishery-based economy	1	2	3	4	5	NS

	Not at all important	Slightly important	Somewhat important	Moderately important	Very Important	Not Sure
Your livelihood	1	2	3	4	5	NS
Human Health	1	2	3	4	5	NS

11. Which of the following do you believe are threats to coral reefs in Puerto Rico? Please indicate:

YES - this is a threat to coral reefs;

NO - this is not a threat to coral reefs;

NOT SURE - I have heard of this, but I am not sure if it is a threat to coral reefs; or

NOT FAMILIAR - I have never heard of this term.

	Yes	No	Not Sure	Not Familiar
Climate change	1	2	NS	NF
Coral bleaching	1	2	NS	NF
Hurricanes	1	2	NS	NF
Pollution from stormwater, wastewater, and chemical runoff	1	2	NS	NF
Marine litter	1	2	NS	NF
Invasive species	1	2	NS	NF
Overfishing and overgathering	1	2	NS	NF
Boat anchoring and grounding	1	2	NS	NF
Ocean acidification	1	2	NS	NF
Divers and snorkelers	1	2	NS	NF
Coral disease	1	2	NS	NF
Lack of regulation enforcement	1	2	NS	NF

SKIP LOGIC: IF 'YES' TO ANY ITEM, ASK ABOUT EACH ITEM IN Q12.

IF 'NO', 'NOT SURE', OR 'NOT FAMILIAR' WITH ALL ITEMS, SKIP TO Q13

12. How severe are each of the following threats to coral reefs in Puerto Rico? -INTERVIEWER REPEATS SCALE AS NEEDED {supports 'awareness and knowledge of reefs' indicator}

	Minor Threat	Moderate Threat	Major Threat	Severe Threat	Not Sure
[ASK IF 'YES' IN Q11] Climate change	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Coral bleaching	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Hurricanes	2	3	4	5	NS

	Minor Threat	Moderate Threat	Major Threat	Severe Threat	Not Sure
[ASK IF 'YES' IN Q11] Pollution from stormwater, wastewater, and chemical runoff	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Marine litter	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Invasive species	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Overfishing and overgathering	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Boat anchoring and grounding	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Ocean acidification	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Divers and snorkelers	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Coral disease	2	3	4	5	NS
[ASK IF 'YES' IN Q11] Lack of regulation enforcement	2	3	4	5	NS

ATTITUDES TOWARD CORAL REEF MANAGEMENT STRATEGIES

[SCRIPT] There are many different management strategies for protecting coral reefs in Puerto Rico. In the next few questions, we are interested in your opinions on some of these strategies.

13. A Marine Protected Area (MPA) **or natural reserve** is an area of the ocean where particular human activities are restricted to protect living, non-living, cultural, and/or historic resources. Before today, were you aware of existing MPAs **or natural reserves** in Puerto Rico? {supports 'awareness of reef regulations' indicator}

- 1 Yes (IF YES, GO TO Q14)
- 2 No (IF NO, SKIP TO Q15)

14. How do you think the establishment of MPAs **or natural reserves** impacted the following in Puerto Rico? - INTERVIEWER REPEATS SCALE AS NEEDED {supports 'attitudes toward reef management strategies' indicator}

	Worsened Greatly	Worsened Somewhat	No Effect	Improved Somewhat	Improved Greatly	Not Sure
Protection of coral reefs	1	2	3	4	5	NS

	Worsened Greatly	Worsened Somewhat	No Effect	Improved Somewhat	Improved Greatly	Not Sure
Amount of fish	1	2	3	4	5	NS
Tourism-based economy	1	2	3	4	5	NS
Fishery-based economy	1	2	3	4	5	NS
Your livelihood	1	2	3	4	5	NS
Outdoor recreation	1	2	3	4	5	NS
Food for coastal communities	1	2	3	4	5	NS
Human health	1	2	3	4	5	NS

15. Next, how much do you oppose or support each of the following management strategies in Puerto Rico? - INTERVIEWER REPEATS SCALE AS NEEDED {supports 'attitudes toward reef management strategies' indicator}

	Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Support	Strongly Support
Establish new catch limits per person for certain fish species	1	2	3	4	5
Create new MPAs or natural reserves	1	2	3	4	5
Establish new requirements for improved wastewater treatment	1	2	3	4	5
Encourage community participation in the management of marine resources	1	2	3	4	5
Increase law enforcement surveillance efforts	1	2	3	4	5
Further restrict sources of pollution for improved water quality	1	2	3	4	5
Restrict coastal development around MPAs	1	2	3	4	5

PARTICIPATION IN BEHAVIORS THAT MAY IMPROVE CORAL HEALTH

[SCRIPT] Now, we'll talk about some activities that can help protect coral reef ecosystems in Puerto Rico.

16. How important is it for Puerto Rico residents to engage in activities that help to protect coral reefs? {supports 'pro-environmental behaviors' indicator}

Not at all Important	Slightly Important	Somewhat Important	Moderately Important	Very Important
1	2	3	4	5

17. Which of the following do you do routinely (whenever possible)? (Check all that apply). {supports 'pro-environmental behaviors' indicator}

- | | Yes | No |
|---|--------------------------|--------------------------|
| a. Reduce household water use..... | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Reduce household electricity use..... | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Compost..... | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Recycle..... | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Use reef-safe forms of sun protection..... | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Promote environmentally responsible practices with others..... | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Minimize fuel consumption..... | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Use fewer single use products (plastic bags or cups, Styrofoam, etc.)..... | <input type="checkbox"/> | <input type="checkbox"/> |

→ SKIP PATTERN: IF 'YES' FOR ALL ITEMS, SKIP TO Q19.
IF 'NO' FOR ANY ITEM, ASK ABOUT EACH ITEM IN Q18.

18. Which of the following are reasons why you do not engage in those activities routinely? (Check all that apply). {supports 'pro-environmental behaviors' indicator}

	I do not know how	It is not convenient	It is too expensive	I have not had the opportunity to do so	None of these reasons
[ASK IF 'NO' IN Q17] Reduce household water use					
[ASK IF 'NO' IN Q17] Reduce household electricity use					
[ASK IF 'NO' IN Q17] Compost					
[ASK IF 'NO' IN Q17] Recycle					
[ASK IF 'NO' IN Q17] Use reef-safe forms of sun protection					
[ASK IF 'NO' IN Q17] Use fewer single use products (plastic bags or straws, Styrofoam,					

	I do not know how	It is not convenient	It is too expensive	I have not had the opportunity to do so	None of these reasons
etc.)					
[ASK IF 'NO' IN Q17] Promote environmentally responsible practices with others					
[ASK IF 'NO' IN Q17] Minimize fuel consumption					

19. In the past 12 months, have you done any of the following activities? {supports 'pro-environmental behaviors' indicator}

- | | Yes | No |
|--|--------------------------|--------------------------|
| a. Donated to an environmental cause..... | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Volunteered in a beach clean-up, citizen science effort, or other environmental effort..... | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Joined or renewed a membership in a conservation organization..... | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Volunteered in environmental restoration activities | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Participated in environmental educational activities (webinars, trainings, etc.) | <input type="checkbox"/> | <input type="checkbox"/> |

➔ **SKIP PATTERN:** IF 'YES' FOR ALL ITEMS, SKIP TO Q21.
IF 'NO' FOR ANY ITEM, ASK ABOUT EACH ITEM IN Q20.

20. Which of the following are reasons why you have not engaged in any of those activities in the past 12 months? (Check all that apply) {supports 'pro-environmental behaviors' indicator}

	I do not know how	It is not convenient	It is too expensive	I have not had the opportunity to do so	None of these reasons
[ASK IF 'NO' IN Q19] Donated to an environmental cause					
[ASK IF 'NO' IN Q19] Volunteered in a beach clean-up, citizen science effort, or other environmental effort					
[ASK IF 'NO' IN Q19] Joined or renewed a membership in a conservation organization					
[ASK IF 'NO' IN Q19] Volunteered					

	I do not know how	It is not convenient	It is too expensive	I have not had the opportunity to do so	None of these reasons
in environmental restoration activities					
[ASK IF 'NO' IN Q19] Participated in environmental educational activities (webinars, trainings, etc.)					

21. In the past 5 years, have you done any of the following? {supports 'pro-environmental behaviors' indicator}

- | | Yes | No |
|--|--------------------------|--------------------------|
| a. Updated the septic or sewer system on my property..... | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Installed water storage system (such as a tank or rain barrel)..... | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Installed a solar energy system..... | <input type="checkbox"/> | <input type="checkbox"/> |

→ SKIP PATTERN: IF 'YES' FOR ALL ITEMS, SKIP TO Q23.
IF 'NO' FOR ANY ITEM, ASK ABOUT EACH ITEM IN Q22.

22. Which of the following are reasons why you have not engaged in those activities? (Check all that apply). {supports 'pro-environmental behaviors' indicator}

	I do not know how	It is not convenient	It is too expensive	I have not had the opportunity to do so	I am not allowed to	None of these reasons
[ASK IF 'NO' IN Q21] Updated the septic or sewer system on my property						
[ASK IF 'NO' IN Q21] Installed water storage system (such as a tank or rain barrel)						
[ASK IF 'NO' IN Q21] Installed a solar energy system						

23. The rules and regulations surrounding coral reefs are sometimes misunderstood. How unacceptable or acceptable are each of the following practices in Puerto Rico?– INTERVIEWER REPEATS SCALE AS NEEDED {supports 'awareness of reef regulations' indicator}

	Very Unacceptable	Somewhat Unacceptable	Neutral	Somewhat Acceptable	Very Acceptable
Operate a boat in a shallow reef area	1	2	3	4	5
Leave trash on the beach	1	2	3	4	5
Anchor a boat on coral	1	2	3	4	5
Feed fish, birds, or marine mammals	1	2	3	4	5
Touch corals with my hands or feet (including standing)	1	2	3	4	5
Take seashells or coral from the reef	1	2	3	4	5
Fish in no-take areas	1	2	3	4	5
Discharge pollutants in seawater	1	2	3	4	5

DEMOGRAPHICS

[SCRIPT] I just have a few more questions that will help us to interpret our results. As a reminder, the information you provide is completely confidential.

24. Do you identify as any of the following?

- Male
- Female
- Other
- No response

25. In what year were you born? _____

26. Were you born in Puerto Rico?

- Yes
- No

27. How many years have you lived in Puerto Rico? _____ Years

28. a) What race do you consider yourself? (Check all that apply).

- American Indian and Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other
- No response

28. b) What ethnicity do you consider yourself? (Choose one)

- Hispanic, Latino, or Spanish origin
- Not Hispanic, Latino, or Spanish origin

29. What is the highest level of education you have completed? (Choose one)

- 8th Grade or Less
- Some high school
- High School Graduate, GED
- Some college, community college or AA
- College Graduate
- Graduate School, Law School, Medical School

30. What is your current employment status? (Check all that apply).

- a. Unemployed
- b. Employed full time
- c. Employed part time
- d. Retired

31. Is your current or most recent occupation related to one or more of the following? (Check all that apply). {demographic question for variable weighting and livelihood contextualization in Q10}

- a. Commercial fishing
- b. Outdoor recreation
- c. Tourism
- d. Coastal science
- e. Not related to any of the above

32. How many adults aged 18 years or older live in your household, including yourself? _____

33. What is your annual household income?

- | | |
|---|--|
| <input type="checkbox"/> Less than \$10,000 | <input type="checkbox"/> \$75,000-\$99,999 |
| <input type="checkbox"/> \$10,000-\$14,999 | <input type="checkbox"/> \$100,000-\$149,999 |
| <input type="checkbox"/> \$15,000-\$24,999 | <input type="checkbox"/> \$150,000-\$199,999 |
| <input type="checkbox"/> \$25,000-\$34,999 | <input type="checkbox"/> \$200,000 or more |
| <input type="checkbox"/> \$35,000-\$49,999 | <input type="checkbox"/> No Response |
| <input type="checkbox"/> \$50,000-\$74,999 | |

Thank you for your time and contribution to this research!

If you have any questions or comments about the research,
please contact Mary Allen at mary.allen@noaa.gov.

For more information about the National Coral Reef Monitoring Program
or to see the results of the survey, please visit
<https://www.coris.noaa.gov/monitoring/socioeconomic.html>.
We hope to have results ready by [the end of 2023].

ID Number: _____