

## Merizo Household Survey

Hafa adai,

My name is \_\_\_\_\_. You have been selected to participate in this survey. We are interested in obtaining your opinions on some important issues related to coral reefs and the environment in Merizo. You were selected because you live in the village of Merizo and your opinions on the issues affecting the coral reefs of Merizo are very important to us.

Your participation is voluntary and the information you provide will be kept strictly confidential. No personally identifiable information (name, address, telephone number, email address) will be linked to your completed survey. The information collected will be viewed only by the NOAA research team compiling the data, and will be destroyed at the end of the information collection process. This process will maintain the anonymity of the responses received. Results will be aggregated, so that no responses can be attributable to individuals. That is, all answers are anonymous.

Thank you for taking the time to assist us with this effort.

Public reporting burden for this collection of information is estimated to average 60 minutes for completing the survey, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to Valerie Brown, NFMS, ([valerie.brown@noaa.gov](mailto:valerie.brown@noaa.gov)).

Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subjected to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

# Attitude Toward/Importance of Coral Reefs

## Participation in Reef Activities

**Q1.** How often do you fish or harvest marine resources for each of the following reasons?

	Never	Rarely	Sometimes	Frequently
1.1 To feed myself and my family/ household				
1.2 To sell				
1.3 To give to extended family members and/or friends				
1.4 For fun				
1.5 For special occasions and cultural events				

**Q2.** How often does your family eat fish/seafood?

- a. Every day
- b. A few times a week
- c. About once a week
- d. 1-3 times a month
- e. Less than once a month
- f. Never

**Q3.** What is an estimate in percentage of your family's seafood harvested from coral reefs around Merizo? \_\_\_\_\_%

## Perceived Resource Condition

**Q4.** In your opinion, how are Guam's marine resources currently doing? Please rank from very bad to very good.

	Very bad	Bad	Neither bad nor good	Good	Very good	Not sure
4.1 Ocean Water Quality (clean and clear)						
4.2 Amount of Coral						
4.3 Number of Fish						
4.4 Number of Turtles						

**Q5.** How would you say the condition of each of the following has changed over the last 10 years. Please rate from “it has gotten a lot worse” to “it has gotten a lot better.”

	A lot worse	Somewhat worse	No change	Somewhat better	A lot better	Not sure
5.1 Ocean Water Quality (clean and clear)						
5.2 Amount of Coral						
5.3 Number of Fish						
5.4 Number of Turtles						

### Perceived threats to coral reefs and community

**Q6.** What do you think are the 3 greatest threats to the reefs in Merizo?

(INTERVIEWER: DO NOT READ. CHECK ONLY 3 ANSWERS BASED ON THE RESPONSES. PROMPT IF NECESSARY)

	Greatest threats
6.1 Coral bleaching from sea surface temperature increase	
6.2 Ocean acidification	
6.3 Erosion in the mountains	
6.4 Stream bank erosion	
6.5 Shoreline erosion	
6.6 Storm water runoff	
6.7 Increased development	
6.8 Chemical runoff (pesticides, herbicides, fertilizers)	
6.9 Sedimentation caused by floods	
6.10 Sedimentation caused by fire	
6.11 Fires in the mountains	
6.12 Sewage discharge	
6.13 Trash	
6.14 Poor water quality	
6.15 Ships and boats grounding on reefs	
6.16 Scuba divers	
6.17 Overuse for recreation / tourism	
6.18 Illegal fishing	
6.19 Harmful Fishing practices	
6.20 Overfishing	
6.21 Typhoons	
6.22 Lack of vegetation in the mountains	
6.23 Off-roading	
6.24 Other: Please list	

**Q7. Please rate how important the following potential threats facing the community in Merizo are?**

	Very unimportant	Unimportant	Neither important nor unimportant	Important	Very important	Not sure
7.1 Hazards from floods on community's properties and infrastructure, e.g. roads						
7.2 Hazards from floods on public health, including water-borne diseases, mold, etc.						
7.3 Hazards from floods on personal and family's safety						
7.4 Impacts of floods on quality of stream and fresh water						
7.5 Impacts of flood on quality of seawater.						
7.6 Hazards from fires on community's properties and infrastructure, e.g. burning of forest and community buildings						
7.7 Hazards from fires on public health, including respiratory problems and burnt injuries, etc						
7.8 Hazards from fires on personal and family's safety						
7.9 Impacts of fires on quality of stream and fresh water						
7.10 Impacts of fires on quality of seawater						

### Attitudes and Perception with Marine Protected Area (Achang Reef Flat Marine Preserves)

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**Q8. How familiar are you with the Achang Reef Flat Marine Preserve?**

1. Very Unfamiliar
2. Unfamiliar
3. Familiar
4. Very Familiar

INTERVIEWER: IF THE RESPONDENT IS UNFAMILIAR OR VERY UNFAMILIAR WITH THE ACHANG MARINE PRESERVE, PLEASE ASK Q 9 and Q10, THEN SKIP TO Q17. IF THEY ARE FAMILIAR OR VERY FAMILIAR, PLEASE PROCEED WITH ALL QUESTIONS.

**Q9.** *Do members of your household participate in each of the following activities in or near the Achang Marine Preserve or Cocos lagoon more than a few times each year?*

		Never	Cocos Lagoon	Achang Preserve	Near Cocos and Achang
9.1	Gathering of animals for gleaning (trochus/ailingling, clams, sea cucumbers, octopus, urchins)				
9.2	Mangrove harvesting				
9.3	Seaweed harvesting				
9.4	Fishing (ask the fishing methods only if they fish)				
9.5	Spear fishing				
9.6	Cast net-fishing (talaya)				
9.7	Gillnet, surround net and drag net-fishing (tekken, chenchulu)				
9.8	Hook-and-line fishin				
9.9	Other kind of fishing: Please list				
9.10	Swimming/wading				
9.11	Snorkeling				
9.12	Diving (SCUBA or free diving)				
9.13	Paddling/kayaking				
9.14	Boarding (surfing, kite surfing, SUP, body-surfing, body-boarding)				
9.15	Jet-ski/ personal watercraft				
9.16	Pleasure boating				
9.17	Beach recreation (beach sports, picnics)				
9.18	Off-Roading				
9.19	Walking/Hiking/Running in the mountains				
9.20	Collecting local medicinal plants				
9.21	Hunting				
9.22	Burning				
9.23	Other activities: Please list				

**Q10. To what degree has your use of Achang Marine Preserve changed since it was established?**

1. Rarely or never used and still do not
2. Decreased significantly
3. Decreased some
4. Has not changed
5. Increased some
6. Increased Significantly
7. Not sure

**Q11. What are the 3 most important benefits of the Achang Marine Preserve for your household?**  
(INTERVIEWER: DO NOT READ. CHECK ONLY 3 ANSWERS BASED ON THE RESPONSES. PROMPT IF NECESSARY.)

1. Increasing the amount of fish
2. Conserving and protecting corals, fish, and other marine life
3. Resolving conflicts among different groups of users
4. Livelihoods of your household
5. Food security
6. Protecting a sacred place
7. Cultural heritage
8. Recreational use
9. Shoreline protection
10. Other: Please list
11. No Benefit

**Q12. In your opinion, which groups have most benefited from the Achang Marine Preserve?**  
(Please select no more than 3) (INTERVIEWER: FIRST READ THE LIST. THEN CHECK 3 ANSWERS BASED ON THE RESPONSES. PROMPT IF NECESSARY)

1. Commercial fishers
2. Local subsistence fishers
3. Recreational/sport fishers
4. Commercial fish and dive operators
5. Local dive operators
6. Recreational (local and tourist) divers
7. Conservation groups
8. Local communities
9. Local government
10. Other: Please list

**Q13.** Please indicate how much you disagree or agree with each of the following statements.

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
13.1	Achang Marine preserve increases the amount of fish inside the zones					
13.2	Achang Marine preserve increases the amount of fish outside the zones					
13.3	Achang Marine Preserve protects coral reefs					
13.4	Guam Department of Agriculture does a good job of enforcing The Achang Marine Preserve regulations					
13.5	There have been economic benefits to Marizo from the establishment of the Achang Marine Preserve					
13.6	Achang Marine Preserve helps educate the public about marine environment					
13.7	Fishermen's livelihoods have been negatively impacted from the establishment of the Achang Marine Preserve					
13.8	Achang Marine preserve help increase tourism in Merizo					
13.9	Achang Marine preserve builds resiliency for future natural disasters					
13.10	I support Achang Marine Preserve					
13.11	The procedures established to deal with Achang Marine Preserve violations have been fair and just					
13.12	Achang Marine preserve supports scientific research					
13.13	I would support adding new marine preserves in Guam if there is evidence that the ones we have are improving Guam's marine resources					
13.14	Guam Department of Agriculture does a good job of educating the public about its rules and regulations for the marine preserves					
13.15	Since the marine preserve regulations have been in effect, there has been no way that the average person to voice his/her opinion on the usefulness of the regulations					
13.16	There should be more marine preserves in Guam					

**Q14. A number of Guam governmental agencies and federal agencies have been working on environmental issues in Merizo over the last five years. These efforts have recently been recognized and included under NOAA’s Habitat Blueprint program. How familiar are you with the NOAA Habitat Blueprint?**

1. Very Unfamiliar
2. Unfamiliar
3. Familiar
4. Very Familiar

**Q15. How successful have local and federal government coral reef management activities in Merizo been for the following? (Please check all that apply)**

		Not successful at all	Not successful	Slightly successful	Highly successful	Somewhat successful	Not sure
15.1	Increasing household participation in natural resources management planning or decision making						
15.2	Increasing use of community input and scientific data in decision making of the Micronesia Challenge						
15.3	Protecting the whole coral reef ecosystem						
15.4	Improving the water quality of the area, including reducing contamination						
15.5	Increasing the public environmental awareness						
15.6	Increasing scientific research						
15.7	Increasing tourism						
15.8	Reduce violations and illegal activities related to fishing, harvesting, and use of natural resources						
15.9	Reducing user conflicts						
15.10	Protecting cultural artifacts or traditions						
15.11	Other: Please list						



**Q16. Please indicate your level of agreement with the following statements: "I would support new fishing regulations in Cocos Lagoon in order to have...?"**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
16.1	More fish on the reef					
16.1	More living corals					
16.2	More sea cucumbers, octopus, lobster, clams and other invertebrates					
16.3	More seagrass					
16.4	More mangroves					
16.5	More large sea life (whales, dolphins, sea turtles, etc.)					
16.6	Cleaner water					
16.7	Less algae					
16.8	Other: Please list					

### Compliance with Rules/Regulations

**Q17. Please rate the extent to which you agree or disagree with each of the following statements.**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not sure
17.1	People fish inside the Achang Marine Preserve no-take zones						
17.2	Fishers who do not comply with fisheries regulations would be seen or detected by enforcement agents						
17.3	People from Merizo respect the Marine Preserve regulations						
17.4	People from outside Merizo respect the Marine Preserve regulations						
17.5	Commercial fishing operations respect Marine Preserve regulations						
17.6	Tourists are knowledgeable of Marine Preserve regulations						
17.7	No specific groups are singled out in enforcement of regulations						
17.8	Legal and trial process for violations is inadequate						

**Q18. Please list your top 3 reasons why some people do not follow the regulations?**  
 (INTERVIEWER: DO NOT READ. CHECK 3 ANSWERS BASED ON THE RESPONSES. PROMPT IF NECESSARY)

		Check 3
18.1	They don't know it's illegal	<input type="checkbox"/>
18.2	They don't know it can harm the environment	<input type="checkbox"/>
18.3	They need to earn a living and feel they have no other option	<input type="checkbox"/>
18.4	They don't care	<input type="checkbox"/>
18.5	People are lazy	<input type="checkbox"/>
18.6	They think it's fun	<input type="checkbox"/>
18.7	They want to fish/dive in a less populated area	<input type="checkbox"/>
18.8	Marine Preserve s have more fish/coral to see/catch	<input type="checkbox"/>
18.9	The Marine Preserve is easier to get to than other fishing areas	<input type="checkbox"/>
18.10	The Marine Preserve is safer than other fishing areas	<input type="checkbox"/>
18.11	There is not enough enforcement	<input type="checkbox"/>
18.12	Other, please specify	<input type="checkbox"/>

### Coral Reef Management Processes and Support

**Q19. Please rate the extent to which you agree/disagree with each of the following statements.**

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not sure
19.1	Coral reefs protect Guam from coastal/shoreline_ erosion and natural disasters like typhoons and tsunamis						
19.2	Diving and snorkeling are not harmful to coral reefs.						
19.3	Coral reefs provide sustainable resources that support the development of our Merizo communities.						
19.4	Establishing size restrictions to regulate fishing is a good management practice.						
19.5	Coral reefs have an important role in our culture						
19.6	Coral reefs are important to my household's way of life						

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Not sure
19.7	Effects from climate change can severely affect coral reefs.						
19.8	Mangroves are not important for protecting the coast from erosion.						
19.9	There are no problems with water quality in the coral reef areas.						
19.10	Sediment runoff from land activities such as wildland fires and construction can harm coral reefs						
19.11	Pesticides and herbicides used in commercial and residential activities can be carried by runoff and affect coral reefs						
19.12	Eliminating some species, like sea urchins, can affect the ecological dynamics of coral reefs						

**Q20.** *To what degree would you be willing to do each of the following in order to protect and maintain the coral reefs in Merizo?*

		Would Not Do	Would Consider	Would Do	Not Sure
20.1	At least once a year volunteer with an organization that is working to protect the reefs (e.g. participate in coastal clean up)				
20.2	Volunteer for community wildfire fighting team in my village				
20.3	Plant native plants or build a rain garden on my property to slow runoff into the river and reduce sedimentation that impact reefs				
20.4	Have non-residents pay a fee for reef related activities like snorkeling, diving and fishing				
20.5	Pay higher local taxes so that parts can be used for reef protection				
20.6	Report Illegal burning that causes sedimentation that impact reefs				
20.7	Change my burning habits to help prevent fires that cause sedimentation that impact reefs				

**Q21. How often do you participate in the following activities to help protect the environment?**

	Never	A few times a year	Once a month	Weekly
21.1 Coastal Cleanup (beach clean up)				
21.2 Community fire watch				
21.3 Reporting Fires				
21.4 Planting trees or native plants to prevention erosion				
21.5 Volunteering with a environmental non-governmental organization				
21.6 Attending local education/awareness initiatives				
21.7 Removing abandon fishing gear				
21.8 Reporting marine preserve violations				
21.9 Other: Please list				

**Q22. How involved are you in making decisions related to the management of coral reefs in Guam?**

1. Not at all involved
2. Slightly involved
3. Moderately involved
4. Involved
5. Very involved
6. Not sure

**Q23. How effective do you think current management efforts are for each of the following in Merizo?**

Management of:	Very ineffective	Ineffective	Neither effective nor ineffective	Effective	Very effective	Don't know
16.2 Fisheries Management						
16.3 Beach access						
16.4 Littering or dumping						
16.5 Illegal burning						
16.6 Pollution, runoff, and sediment						
16.7 Coastal development						

Management of:	Very ineffective	Ineffective	Neither effective nor ineffective	Effective	Very effective	Don't know
16.8 Tourist activities						
16.9 Other: Please list						

**Q24.** *In your opinion, who is primarily responsible for management activities to protect coral reefs (and associated marine life)? (check one)*

1. Village residents
2. Village leadership
3. Guam residents
4. The local government
5. The federal government
6. Other, please specify \_\_\_\_\_

**Q25.** *How familiar are you with each of the following local, national, and international coral reef conservation programs?*

	Very unfamiliar	Unfamiliar	Familiar	Very familiar
25.1 Guam Coral Reef Initiative				
25.2 NOAA/National Coral Reef Conservation Program				
25.3 Micronesia Challenge				
25.4 International Coral Reef Initiative				
25.5 NOAA Habitat Blueprint				
25.6 Guam Nature Alliance (formerly Guam Environmental Education Committee)				

**Q26.** *To what extent would you oppose or support changes to existing management processes in Merizo?*

Fishing and Harvesting Practices	Strongly oppose	Oppose	Neither support nor	Support	Strongly	Not sure
26.1 Regulate commercial fishing						
26.2 Create area for only traditional fishing						
26.3 Prohibit SCUBA-spear fishing						
26.4 Prohibit gill nets (tekken) and drag nets (chenchulu)						
26.5 Create more no-catch zones for only fish that eat algae						

		Strongly oppose	Oppose	Neither support nor	Support	Strongly	Not sure
<b>Fishing and Harvesting Practices</b>							
	(ex. Laggua, sesyon, tataga, and kichu) [could still catch mafute, gadao, tarakitu, etc)						
26.6	Minimum size limits on fish that can be taken						
26.7	Species restrictions						
26.8	No taking of sea cucumbers and sea urchins inside Cocos Lagoon						
26.9	Allow shore-based hook-and-line fishing regulation in Achang Preserve						

		Strongly oppose	Oppose	Neither support nor oppose	Support	Strongly support	Don't know
<b>Other Rules/Regulations</b>							
26.10	Increase community participation in preserve management						
26.11	Stricter controls on sediment and runoff from land to the ocean						
26.12	Restrictions on coastal development						
26.13	Limiting tourist activities in Merizo						
26.14	Require permits and certification requirements for water sports tour operators						
26.15	Other: Please list						

## Your Sources of Information about Coral Reefs

**Q27.** Which of the following sources would you consider to be your primary sources of information about coral reefs in Merizo? (Please check up to 5).

1. Newspaper
2. Radio
3. Television
4. Internet
5. Informational signs
6. Community leaders
7. Community/club Meeting
8. Work
9. Friends

10. Family
11. Teachers
12. Religious Leaders
13. Workshop
14. Word of mouth
15. Social Media
16. Federal government agencies (NOAA, EPA)
17. Guam governmental agencies (BSP, DAWR)
18. People who participate in coral reef related activities
19. Magazines
20. Government agency publications
21. Conservation organization publications
22. NOAA sponsored Publications or websites
23. Other: Please list
24. None

**Q28. Which of the above sources would you consider to be the 3 most trustworthy sources of information about coral reefs in Merizo? (INTERVIEWER, PLEASE WRITE 1 FOR THE MOST TRUSTWORTHY SOURCE. 2 FOR SECOND MOST TRUSTWORTHY AND 3 FOR THIRD TRUSTWORTHY AFTER THE SOURCES ABOVE)**

## **Demographic Questions**

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*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.*

**Q29. How many family members live in this household (including yourself)?**

**Q30. What is your age?**

**Q31. What is your sex?**

*(Check the answer without asking.)*

1. Male
2. Female

**Q32. What is the highest level of education you have completed?**

*(Do not read out the choices. Check one choice that applies to the answer.)*

1. 8th Grade or Less
2. 9th to 11th Grade
3. 12th Grade, High School Grad, GED
4. 13 to 15 Years (some community college or vocational training)

5. College Graduate
6. Graduate School, Law School, Medical School
7. No Response

**Q33. What is your current employment status?**

1. Unemployed
2. Employed full-time
3. Employed part-time
4. Retired
5. None of the above (Please specify)\_\_\_\_\_

**Q34. In which sector are you employed?**

*(Ask only for those who check employed full or part time. (Do not read out the choices. Check all choices that apply to the answer.)*

1. Management, professional etc.
2. Service & Tourism
3. Retail Sales
4. Fishing/ Aquaculture
5. Construction & Maintenance
6. Transportation
7. Government (Federal)
8. Government (Local)
9. Agriculture
10. Education
11. Law Enforcement
12. Health / Medical
13. Communications
14. Homemaker
15. Other: Please specify\_\_\_\_\_

**Q35. Is your occupation affiliated with the marine environment/industry in Merizo?**

1. Yes
2. No
3. Not sure

**Q36. If YES, please circle the industry that best fits your primary profession.**

1. Commercial fishing
2. Charter fishing
3. Dive/snorkel operation
4. Marina/boat operation
5. Other watersports



6. Eco-tour operation
7. Ecological research
8. Ocean/coastal management
9. Artisan
10. Education
11. Other: \_\_\_\_\_

**Q37. What is your annual household income?**

1. Under \$10,000
2. \$10,000 to \$19,999
3. \$20,000 to \$29,999
4. \$30,000 to \$39,999
5. \$40,000 to \$49,999
6. \$50,000 to \$59,999
7. \$60,000 to \$74,999
8. \$75,000 to \$99,999
9. \$100,000 to \$149,999
10. \$150,000 or More
11. No Response

**Q38. How many years have you lived at this location? \_\_\_\_\_ Years**

**Q39. What race/ethnicity do you consider yourself?**

(Do not read out the choices. Check all choices that apply to the answer.)

1. Chamorro
2. White American
3. Carolinian
4. Chuukese
5. Filipino
6. Japanese
7. Yapese
8. Korean
9. Marshallese
10. Other Pacific Islander
11. Palauan
12. Pohnpeian
13. Vietnamese
14. Hispanic
14. Other/Mixed \_\_\_\_\_

**Q40. What is the primary language(s) spoken in your household?**

(Do not read out the choices. Check all choices that apply to the answer.)

1. English
2. Chamorro
3. Tagalog
4. Japanese
5. Other: Please list
6. No Response

**Q41. What religion do you consider yourself?**

*(Do not read out the choices. Check all choices that apply.)*

1. Catholic
2. Episcopal
3. Lutheran
4. Seventh Day Adventist
5. Atheist/Humanist
6. Other: Please list
7. None
8. No Response

**Q42. Please check each group of which you a member?**

1. Chamber of Commerce
2. Environmental Group. Which one? \_\_\_\_\_
3. Local religious or community organization. Which one? \_\_\_\_\_
4. Other, please specify
5. Is not a member of any group

**Q43. Do you own a boat?**

1. Yes
2. No

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**THANK YOU (in various languages)**