

# PERCEPTION OF MARINE DEBRIS BY USERS OF COMMERCIAL FISHING GEAR IN THE CORE SOUND AREA, NORTH CAROLINA

## Consent to participate in research

This research is part of a larger National Ocean Service-led study on marine debris in coastal North Carolina. Marine debris is garbage, trash and/or lost or discarded fishing gear in the marine environment (ocean; marsh; beach). **This survey is about Core Sound, Back Sound, and The Straits ONLY.**

Since fishermen are primary users of the Core Sound, Back Sound, and The Straits area, referred to as the Core Sound Area, we are interested in your perceptions of marine debris and its potential impacts (including impacts on fishing). We are also interested in any suggestions that you might have about how to reduce marine debris in these areas. Potential benefits from this survey include a greater understanding of the presence of marine debris in the Core Sound Area, and a collection of proposed suggestions as to how marine debris might be reduced.

**This survey is about marine debris, not about fishing practices. The National Ocean Service is a division of NOAA that does not make fisheries regulations and is not involved in fishing-related enforcement.**

It should take you less than 25 minutes to complete this survey. **The survey is voluntary and anonymous.** We are interested in broad social patterns, and do not focus on individual responses. The data collected will not be linked to any personal information, and will be only be presented in aggregated data sets. All surveys will be kept in a secure, protected location by the principal investigator (Shay Viehman), and originals (surveys and project notes) will be destroyed once analysis is complete. This form will be detached from the actual survey. **Your name will not be affiliated with the survey.**

**\*\* This survey is ONLY for people who fish under a commercial fishing license/permit or a recreational commercial gear license (RCGL) issued by the North Carolina Division of Marine Fisheries in Core and/or Back Sound. If you do not meet this criteria -- please do not continue with the survey\*\*.**

Your participation is voluntary, and you may stop participating at any time, for any reason. Please take as long as you want and feel free to skip any question that you do not want to answer.

**IF YOU WOULD LIKE TO PARTICIPATE IN THIS STUDY, PLEASE SIGN BELOW AND TURN THE PAGE TO BEGIN YOUR SURVEY.**

**THANK YOU FOR PARTICIPATING!**

### INFORMED CONSENT

I have read this form and agree to participate in this study.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

The following scientists are involved in this study:

Shay Viehman (Ecologist, NOAA, National Ocean Service, Beaufort Lab); - **contact at 252-728-8744 if you have any questions or to relate a research-related problem.**

Ryan Kelty, PhD (Washington College Sociology Dept)

Chris Ellis, PhD at (NOAA Coastal Services Center, Human Dimensions Program)

Zoe Meletis, PhD (University of Northern British Columbia, Dept of Outdoor Recreation and Tourism Management)

Jenny Vander Pluym, NOAA, National Ocean Service, Beaufort Lab

Jennifer Schellinger, Earth Resources Technology

Brett Harrison, Earth Resources Technology

**PERCEPTION ON MARINE DEBRIS  
BY USERS OF COMMERCIAL FISHING GEAR  
IN CORE SOUND, BACK SOUND, AND THE STRAITS  
NORTH CAROLINA**

Date:
Location:
Interviewer initials:
Survey number:

*REMINDER: This survey is only for people who fish under a commercial fishing license/permit or a recreational commercial gear license issued by the North Carolina Division of Marine Fisheries, in Core and/or Back Sound or The Straits. If you do not fish under one/both of these licenses, please do not continue with the survey. Thank you.*

**FISHING PRACTICES**

**1.** What type(s) of license(s) or permit(s) do you hold from the NC Division of Marine Fisheries that you primarily use in the Core Sound Area (Core Sound, Back Sound or The Straits)?

- Standard Commercial Fishing License (SCFL)
- Retired Standard Commercial Fishing License (RSCFL)
- Recreational Commercial Gear License
- Shellfish endorsement
- Lease: shellfish aquaculture
- Lease: pound net fishing
- Other

**2.** Approximately how many fishing days per year are associated with each type of fishing you do and how many people (**besides you**) fish on your boat under each type in the Core Sound Area (Core Sound, Back Sound, The Straits)?

	<i>Days</i>	<i># of people</i>	<i>Comments</i>
<b>Gill Net</b>			
<b>Pots/Traps</b>			
<b>Crab</b>			
<b>Eel</b>			
<b>Fish</b>			
<b>Shrimp</b>			
<b>Pound Net</b>			
<b>Seine</b>			
<b>Shellfish</b>			
<b>Clam Aquaculture</b>			
<b>Clam Dredging</b>			
<b>Clam Raking</b>			
<b>Shrimp Trawl</b>			
<b>Channel net</b>			
<b>Hook &amp; Line</b>			
<b>Other gear type (specify)</b>			

**3.** How many years have you been a commercial fisherman in the Core Sound Area (Core Sound, Back Sound, The Straits) of North Carolina? \_\_\_\_\_ years

**INCIDENCE OF MARINE DEBRIS AND DERELICT FISHING GEAR**

Marine debris is any trash, garbage, or other item (e.g. fishing gear) disposed of or abandoned (intentionally or unintentionally) in the marine environment (ocean, sound, marsh, beach). Fishing gear can become a type of marine debris if it is lost or discarded (such as ghost gear); we refer to this as derelict fishing gear in this survey.

**In this survey, marine debris (Section 1) is treated separately from derelict fishing gear (Section 2). When answering about marine debris, do not include answers about derelict fishing gear.**

REMINDER: all the questions in this survey are only about Core Sound, Back Sound, and The Straits, referred to as the Core Sound Area (not other geographic areas).

**Section 1: Marine Debris**

**4.** What, if any, types of **marine debris** (not including derelict fishing gear) do you see in the Core Sound Area?

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**5.** What type(s) of **marine debris** have you caught or had entangled in your gear when fishing in the Core Sound Area during the past year? (*check one per row*)

Type of marine debris	Frequency						What type(s) of gear were you using at the time?
	Never	Rarely	Occasionally	Often	Very often	Unsure	
Plastics (ex. sheeting, cups, plastic pieces)							
Glass (ex. bottles, fiberglass boat parts)							
Wood (ex. boards, pilings, boat parts)							
Rubber (ex. tires, balloons, gloves)							
Foam (ex. styrofoam, cups, boat cushions, pieces)							
Metal (ex. cans, boat or car parts)							
Fabric (ex. pieces of awning, cushion covers)							
Paper products (ex. bait box, cups)							
Other ( <i>specify</i> )							
Other ( <i>specify</i> )							

**6.** How often you have encountered or observed **marine debris** in the following locations in the Core Sound Area in the past year. (*check one per row*)

Location	Frequency					
	<i>Never</i>	<i>Rarely</i>	<i>Occasionally</i>	<i>Often</i>	<i>Very often</i>	<i>Don't Know</i>
On water surface						
Underwater						
In marshes						
In beaches						
Other ( <i>specify</i> )						
Other ( <i>specify</i> )						

**7.** In your opinion, how much do these factors contribute to **marine debris** in the Core Sound Area? (*check one per row*)

Factors	Frequency					
	<i>Never</i>	<i>Rarely</i>	<i>Occasionally</i>	<i>Often</i>	<i>Very often</i>	<i>Don't know</i>
Natural Factors (ex. wind, currents, storms)						
Recreational users (incl. boating, hunters)						
Commercial transportation (ex. ferries, cruise ships)						
Other industries (ex. construction; manufacturing)						
Commercial fishing (ex. small and large scale boats and fish houses)						
Other ( <i>specify</i> )						
Other ( <i>specify</i> )						

## Section 2: Derelict Fishing Gear

**8.** What types of **derelict fishing gear** have you seen in the Core Sound Area?

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**9.** What types of **derelict fishing gear** have you caught in your gear when fishing in the Core Sound Area during the past year? (*check one per row*)

Type of derelict fishing gear	Frequency						What type(s) of gear were you using at the time?
	Never	Rarely	Occasionally	Often	Very often	Don't know	
Floats and ropes							
Pound nets and stakes							
Crab pot gear							
Gill nets							
Aquaculture nets							
Clam Harvest gear (e.g. nets, dredges, rakes)							
Seines							
Channel nets							
Trawl or dredge gear							
Hook & Line (monofilament, lures)							
Other ( <i>specify</i> )							
Other ( <i>specify</i> )							

**10.** How often you have encountered or observed **derelict fishing gear** in the following locations in the Core Sound Area in the past year? (*check one per row*)

Location	Frequency					
	Never	Rarely	Occasionally	Often	Very often	Don't Know
On water surface						
Underwater						
In marshes						
In beaches						
Other ( <i>specify</i> )						
Other ( <i>specify</i> )						

**11. In your opinion, what are the major contributors to derelict fishing gear in the Core Sound Area?**  
 (You may check more than one box per row)

Types of Derelict Fishing Gear	Potential contributors to derelict fishing gear				
	<i>Natural Factors</i> <small>(wind, currents, storms)</small>	<i>Financial Reasons</i> <small>(reduction of gear due to fuel costs, abandonment)</small>	<i>Intentional Gear Damage</i> <small>(competitive line cutting, vandalism)</small>	<i>Unintentional Gear Damage</i> <small>(wildlife, boaters)</small>	<i>Other (specify)</i>
Floats and ropes					
Pound nets and stakes					
Crab pot gear					
Gill nets					
Aquaculture nets					
Clam Harvest gear (e.g. nets, dredges, rakes)					
Seines					
Channel nets					
Trawl or dredge gear					
Hook & Line (monofilament, lures)					
Other (specify)					
Other (specify)					

**POTENTIAL IMPACTS OF MARINE DEBRIS AND DERELICT FISHING GEAR**

In this section, we are interested in your perception of the potential impacts caused by **1) marine debris and 2) derelict fishing gear** on your fishing practices and the environment.

**Section 1: Marine Debris**

**12.** Does **marine debris** impact your fishing practices? (circle one) Yes No  
 If yes, please explain how.

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**13.** Please rank how, in your opinion, each different type of marine debris (listed on the left) impacts the marine habitat and organisms within it (e.g. water, shore, vegetation, fish, birds, crabs, turtles, other organisms).

(Please check one box per line).

Types of marine debris	Level of Impact						
	Very negative impact	Slightly negative impact	No impact	Slightly positive impact	Very positive impact	Don't know	Please explain your response
Plastics (ex. sheeting, cups, plastic pieces)							
Glass (ex. bottles, fiberglass boat parts)							
Wood (ex. boards, pilings, boat parts)							
Rubber (ex. tires, balloons, gloves)							
Foam (ex. styrofoam, cups, boat cushions, pieces)							
Metal (ex. cans, boat or car parts)							
Fabric (ex. pieces of awning, cushion covers)							
Paper products (ex. bait box, cups)							
Other ( <i>specify</i> )							
Other ( <i>specify</i> )							

**14.** (deleted)

## Section 2: Derelict Fishing Gear

**15.** Does **derelict fishing gear** impact your fishing practices? (*circle one*) Yes No

If yes, please explain how.

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**16.** Please rank how, in your opinion, each different type of **derelict fishing gear (listed on the left)** impacts the marine habitat and organisms within it (e.g. water, shore, vegetation, fish, birds, crabs, turtles, other organisms). (Please check one box per line).

Types of Derelict Fishing Gear	Level of Impact						Please explain your response
	Very negative impact	Slightly negative impact	No impact	Slightly positive impact	Very positive impact	Unsure	
Floats and ropes							
Pound nets and stakes							
Crab pot gear							
Gill nets							
Aquaculture nets							
Clam Harvest gear (e.g. nets, dredges, rakes)							
Seines							
Channel nets							
Trawl or dredge gear							
Hook & Line (monofilament, lures)							
Other ( <i>specify</i> )							
Other ( <i>specify</i> )							

**17.** (deleted)

**18.** Please write the **type(s) of marine debris and/or the type(s) of derelict fishing gear**, if any, that you feel have the greatest impact on:

your fishing practices \_\_\_\_\_

underwater (plants, fish, bottom) \_\_\_\_\_

the shore (shoreline, plants, animals) \_\_\_\_\_

human health \_\_\_\_\_

**19. In your opinion, how are each of the following issues affecting the Core Sound Area environment?**  
 (Please check one box per line):

Type of environmental issue	Type of effect on the Core Sound Area environment						Comments
	Very negative	Somewhat negative	Neutral	Somewhat positive	Very positive	Don't know	
Coastal Development							
Marine Debris							
Derelict Fishing Gear							
Water Quality							
Other (specify)							
Other (specify)							

**DISPOSAL OF MARINE DEBRIS AND DERELICT FISHING GEAR**

This section is about potential suggestions for reducing marine debris and derelict fishing gear in the Core Sound Area (Core Sound, Back Sound, and The Straits).

**20.** Over the course of your fishing career, what changes, if any, have you noticed in the amount of **marine debris and derelict fishing gear** present in the Core Sound Area? (Please check one box per line)

	<i>Much Less</i>	<i>Somewhat Less</i>	<i>No Change</i>	<i>Somewhat More</i>	<i>Much More</i>	<i>Don't know</i>
Marine Debris						
Derelict Fishing Gear						

**20a.** What specifically do you feel has caused these changes and why?

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**21.** What do fishermen in the Core Sound Area typically do with marine debris and derelict fishing gear that they encounter?

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22. What goes into a fisherman's decision about whether or not to remove derelict fishing gear?

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23. Do you have any suggestions for reducing **marine debris** in the Core Sound Area? If so, please share some of them in the space provided below.

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24. Do you have any suggestions for reducing **derelict fishing gear** in the Core Sound Area? If so, please share some of them in the space provided below.

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**DEMOGRAPHIC VARIABLES:**

**Collecting demographic information (age, income, etc.) allows us to better describe our sample. This information is confidential and anonymous; it will only be used for research purposes and will not be associated with your name.**

What proportion of your household income in 2008 came from fishing? (Please check one box)

- 0%-24%       25%-49%       50%-74%       75%-100%

What is your age range?

- 10-20  
 20-30  
 30-40  
 40-50  
 50-60  
 60-70  
 70-80  
 80 +

Gender: Male/Female

Education level (please check the box beside the HIGHEST level completed)

- some high school  
 completed high school  
 some trade school  
 completed trade school  
 some college  
 completed college  
 some graduate school  
 completed graduate school

***This is the end of our survey questions***

***Thank you very much for participating!***

**Please turn to the following 2 pages for optional additional information**

## **CAN YOU SUGGEST OTHER PARTICIPANTS?**

Finding participants for this research might not always be an easy task due to people's busy schedules and the mobile nature of fishing...

If you can think of anyone who might be interested in participating, we would appreciate your help. Please write names and numbers in the spaces provided below.

*All survey information and participant referrals will remain protected and will only be used to ask your contacts if they would like to participate in this voluntary study. Contact information will be stored in a secure location and will not be linked in any way to survey results.*

Name (optional) \_\_\_\_\_  
phone number, email, or other contact info \_\_\_\_\_

\_\_\_\_\_

Name (optional) \_\_\_\_\_  
phone number, email, or other contact info \_\_\_\_\_

\_\_\_\_\_

Name (optional) \_\_\_\_\_  
phone number, email, or other contact info \_\_\_\_\_

\_\_\_\_\_

Name (optional) \_\_\_\_\_  
phone number, email, or other contact info \_\_\_\_\_

\_\_\_\_\_

Name (optional) \_\_\_\_\_  
phone number, email, or other contact info \_\_\_\_\_

\_\_\_\_\_

## **DATA RETURN**

If you are interested in receiving a summary of the results please include your contact information below.

This information will be detached from your survey responses and stored separately in a protected location. Your contact information will not be associated with your responses when we present results.

Please include an email address if you would like to receive the results by email, and a mailing address if you would like a hard copy mailed to you.

Name: \_\_\_\_\_

Email: \_\_\_\_\_

OR

Mailing Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

For any further information or questions, please contact:

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Beaufort, NC 28516  
252-728-8744

**THANKS AGAIN!**