

## Appendix A: Fishermen Questionnaire

Name of Interview \_\_\_\_\_ Date: \_\_\_\_\_ ID number: \_\_\_\_\_  
City: \_\_\_\_\_ Port: \_\_\_\_\_

### INTRODUCTION STATEMENT

Note: Reading this statement to the interviewee is compulsory. It ensures all interviews are treated equally.

My name is \_\_\_\_\_. I am a (graduate student) scientist working with ProDelphinus, which is a non-profit organization based in Lima which is supporting research to protect the ocean. The goal of this project is to learn more about accidental capture of humpback whales and any other marine wildlife where you fish. We are surveying people about whales and turtles you may have seen, what fishing gear you use, where you fish, and a few other questions as part of the study. We have maps and pictures that can be used to help answer some of the questions. The survey will take between 30 to 45 minutes to complete. Information from our research could be used to help reduce the capture of humpback whales and other marine mammals and sea turtles. **Your participation in this survey is voluntary and confidential. We will not record your name or any personal information you share with us. Individual answers will be collected and reported on as a group to provide a general idea of current status, and we will absolutely not share your individual answers to anyone outside of the research team. There is little risk or benefit to you in answering these questions. You do not have to answer questions you do not want to. Would you like to participate in the survey? (if yes) Thank you for your help!**

### INTERVIEWEE BACKGROUND

Note: Please mark the check box if the question is not asked

1. Age: \_\_\_\_\_ ☐ 2. Gender: Male ☐ Female ☐
3. Have you previously participated in interviews related to?:  
Fishing ☐, Marine mammals ☐, MPAs ☐, Ecotourism ☐, Marine turtles ☐, Others ☐, None ☐  
When did you participate? \_\_\_\_\_  
Describe: \_\_\_\_\_
4. What is your main occupation Fishing ☐ Tour Guide ☐ Boat Captain / Crew ☐ Air Services ☐ Retired ☐  
Other ☐ Please describe: \_\_\_\_\_
5. For how many years has this been your occupation? \_\_\_\_\_
6. Were your parents' fishers? Yes ☐ No ☐ Grandparents? Yes ☐ No ☐
7. Is fishing the main way you earn a living? Yes ☐ No ☐
8. (if no) What is (or are) your other occupation(s)? \_\_\_\_\_
9. Which months do you normally fish (out of the last 12)? \_\_\_\_\_

(if seasonal, indicate season start and end)

---

10. How many days each week do you fish? \_\_\_\_\_ days (low season) \_\_\_\_\_ days (peak season)
11. What is your position on the boat? The captain ☐ A crew member ☐ We have no fixed positions ☐  
I do not work on a boat ☐ (*skip next questions if person does not work on a boat*)
12. How many fishers, including yourself, work on the boat? \_\_\_\_\_
13. How long is the boat? \_\_\_\_\_  
(*Note to interviewer: convert and provide answer in meters*)
14. What type of motor do you have (if yes) Inboard ☐ Outboard ☐ ☐
15. What is the horsepower of the motor? \_\_\_\_\_

### **FISHERY INFORMATION**

*Note to interviewer: Respondent should answer these questions to describe his/her individual experience, not that of their community. Use illustrations to assist where necessary.*

16. What type of fishing gear do you use? **(USE MAP)** (*Indicate what months*)
- |  |  |
|--|--|
| <p>Gill or trammel nets</p>                          | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p> <p>Target: _____</p> <p>Do you tend the nets when they are in the water? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>How long do you leave the nets in the water? _____ hours</p> <p>What is the position of the gear? Surface <input type="checkbox"/> Mid-water <input type="checkbox"/> Bottom <input type="checkbox"/></p> <p>Describe the net: Length _____ Depth _____ Mesh size _____</p> |
| <p>Longline<br/>(<i>many hooks</i>)</p>              | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p> <p>Target: _____</p> <p>How many hooks do you use? _____ Type: _____</p> <p>What is the position of the gear? Surface <input type="checkbox"/> Mid-water <input type="checkbox"/> Bottom <input type="checkbox"/></p>  |
| <p>Hook and line<br/>(<i>one or few hooks</i>)</p>   | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p> <p>Target: _____</p>   |
| <p>Jigger<br/>(<i>one of a few hooks</i>)</p>        | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p> <p>Target: _____</p>   |
| <p>Purse Seine<br/>(<i>net of surround nets</i>)</p> | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p> <p>Target: _____</p>   |
| <p>Beach Seine</p>                                   | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p> <p>Target: _____</p>   |
| <p>Traps</p>   | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p> <p>Target: _____</p>   |
| <p>Other (describe): _____</p>                       | <p>Only <input type="checkbox"/> Mostly <input type="checkbox"/> Sometimes <input type="checkbox"/> Season: _____</p>  |

Target: \_\_\_\_\_



### **HUMPBACK WHALE BYCATCH**



*(show reference photos and ask, "Which whale have you seen here?")*

17. Have you ever personally seen a humpback whale in the ocean? Yes ☐, No ☐

Do you have another name for it? \_\_\_\_\_

18. Is there a difference between a humpback whale and other whales? Yes ☐, No ☐, I don't know ☐

19. If yes, tell me the difference between a humpback whale and others?  
\_\_\_\_\_

20. How long do you think a humpback whale lives? \_\_\_\_\_ I don't know ☐

21. When you go out to fish, in what moments do you see humpbacks whales? (do not lead participant) Seen while fishing ☐, Seen while traveling to fishing areas ☐, accidentally caught in nets ☐, hunted ☐, stranded on the beach ☐ Other ☐  
\_\_\_\_\_

22. How frequently have you seen humpback whales? Never ☐, Once in my life ☐, Only a few times in my life ☐, Frequently ☐, Every year for the last five years ☐, In the last year only once ☐, Several times ☐, Every month ☐, Every week ☐, Every day ☐.

23. In what month(s) have you seen humpback whales? (indicate months when seasons are used)  
\_\_\_\_\_

24. When was the last time you saw a humpback whale? \_\_\_\_\_

*(If long time ago note the year)* **(USE MAP AND TABLE)**

25. Do you know of other areas where humpback whales occur? **(USE MAP)** Yes ☐, No ☐

26. Do these humpback whale areas change over time? Yes ☐, No ☐, I don't know ☐

28. Have you ever seen humpback whale calves/babies? Yes ☐, No ☐, When? \_\_\_\_\_

*(In what months?)* **(USE MAP AND TABLE)**

29. Do people from your town/community entangle humpback whales? Yes ☐, No ☐, I don't know ☐

30. Have you, or your boat entangle a humpback whale in your nets the year 2018? Yes ☐ No ☐

**(USE MAP AND TABLE)**

*(If yes, ask)* How many in that year? 1-2 ☐ ≤10 ☐ >10 ☐

Was it a typical number to catch/entangle in that year? Yes ☐ No ☐

*(If no)* Was it more or less than usual? High ☐ Low ☐

31. Have you entangled a humpback whale in your nets in the last five years? 0 ☐ 1-2 ☐ ≤10 ☐ >10 ☐

Specify: \_\_\_\_\_

How many times in your life have you entangled a humpback whale in your nets? 0 ☐ 1-2 ☐ ≤10 ☐ >10 ☐

Specify: \_\_\_\_\_

32. How or in what part of the body gets entangled? Head ☐ Tail ☐ Body ☐ Other ☐

Describe: \_\_\_\_\_

33. What do you (or would you) do if you entangled a humpback whale?

Discard (dead) ☐ Release (alive) ☐ Eat ☐ Sell ☐ Use as bait ☐ Other uses ☐

34. Have you ever found ☐ or heard ☐ of humpback whales stranded **on the beach**?

Yes ☐ No ☐ (*explain*) (If the answer is yes) **(USE MAP AND TABLE)**

35. Have you ever found ☐ or heard ☐ of humpback whales dead **in the water**?

Yes ☐ No ☐ (*explain*) (If the answer is yes) **(USE MAP AND TABLE)**

36. Have you ever found ☐ or heard ☐ of humpback whales with **ropes or nets swimming in the water**?

Yes ☐ No ☐ (*explain*) (If the answer is yes) **(USE MAP AND TABLE)**

37. What would you do if you found a stranded humpback whale on the beach?

\_\_\_\_\_

### PERCEPTIONS OF HUMPBACK WHALES



(*optional, if there is time*)

38. Compared to when you started fishing, ¿Are there more ☐, less ☐, or the same number of humpback whales ☐ ? I don't know ☐ Why do you think this?

(*Note to interviewer: try to determine what other impacts may be driving the trend*)

39. On scale from 1 to 5, Do you think there will always be humpback whales in the ocean?

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
There will be a time when there are no humpbacks in the ocean	There is going to be some humpbacks	I am not sure	There will probably be humpbacks in the ocean	There will always be humpbacks in the ocean

Why? \_\_\_\_\_

40. Do you think having humpbacks in the ocean is .... I don't know ☐

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not important	slightly important	Important	Fairly important	Very important

Why? \_\_\_\_\_

41. Do you know if it is illegal to intentionally kill humpback whales? Yes ☐ No ☐ I don't know ☐

Do you know if it is illegal to accidentally capture humpback whales? Yes ☐ No ☐ I don't know ☐

Details \_\_\_\_\_

42. Are there areas patrolled? (Explain the role of DICAPI) Yes ☐ No ☐ I don't know ☐ **(USE MAP)**

How often? Frequently ☐ Infrequently ☐ Never ☐ I don't know ☐

43. If yes, are penalties ever imposed? Frequently ☐ Infrequently ☐ Never ☐ I don't know ☐

44. Are there any local customs, beliefs, legends or rituals or stories related to humpback whales? Yes ☐ No ☐

(if yes) Please describe: \_\_\_\_\_

\_\_\_\_\_

Where / from whom did you hear this? \_\_\_\_\_

45. Any additional stories you wish to share about the humpback whale?

\_\_\_\_\_

\_\_\_\_\_



### **LEATHERBACK TURTLE BYCATCH**



*(show reference photos and ask, "Which turtles have you seen here?")*

46. Have you ever seen sea turtles? Yes ☐, No ☐

Do you have other names for them? \_\_\_\_\_

47. What species of turtles have you seen? Green turtle ☐, Hawksbill ☐, Olive Ridley ☐,

Loggerhead ☐, Leatherback turtle ☐, I don't know ☐

*(If they have seen leatherback turtle, continue through this section, if not, skip to question 61)*

Do you know the key features of a leatherback turtle? Yes ☐, No ☐ I don't know ☐

*(Note to interviewer: show reference photos)*

Please describe: \_\_\_\_\_

Do you have another name for it? (If yes) Please list: \_\_\_\_\_

48. How long do you think a leatherback turtle lives? \_\_\_\_\_ I don't know ☐
49. When you go out to fish, in what moment have you seen leatherback turtles? While fishing ☐ While traveling to fishing grounds ☐ Accidentally caught in the nets ☐ Hunted ☐ Stranded on the beach ☐
50. How frequently have you seen leatherbacks? Once in my life ☐ Only a few times in my life ☐ Frequently ☐ Every year in the last five years ☐ In the last year only once ☐ Several times ☐ Every month ☐ Every week ☐ Every day ☐
51. In what months do you usually see leatherbacks? (indicate months or seasons): \_\_\_\_\_
52. When was the last time you saw a leatherback? \_\_\_\_\_ (if it was a long time ago, note the year) **(USE MAP AND TABLE)**
53. Do you know of any areas where leatherbacks regularly occur? **(USE MAP)** Yes ☐ No ☐
54. Do you know if these areas change over time? Yes ☐ No ☐ I don't know ☐
56. Do you see mating leatherbacks? Yes ☐ No ☐ **(USE MAP AND TABLE)**
57. Have people in your town/community catch leatherbacks? Yes ☐ No ☐ I don't know ☐
58. Have you accidentally captured a leatherback in the year 2018? Yes ☐ No ☐  
(if yes) How many in that year? 1-2 ☐ ≤10 ☐ >10 ☐ Specify: \_\_\_\_\_  
**(USE MAP AND TABLE)**  
Is that a typical number to catch in a year? Yes ☐ No ☐  
(if yes) Was it more or less than usual? More ☐ Less ☐
59. Have you captured other leatherbacks in **the last five years**? 0 ☐ 1-2 ☐ ≤10 ☐ >10 ☐ Specify:  
How many in your life? 0 ☐ 1-2 ☐ ≤10 ☐ >10 ☐ Specify: \_\_\_\_\_
60. How or in what way does it get entangled? head ☐ fins ☐ the whole body ☐ other ☐  
Please describe: \_\_\_\_\_
61. What do you (would you) do if you accidentally captured a leatherback in your gear?  
Discard (*dead*) ☐ Release (*alive*) ☐ Eat ☐ Sell ☐ Use as bait ☐ Other uses ☐: \_\_\_\_\_

62. Have you ever found ☐ or heard of ☐ leatherbacks **stranded on the beach**? Yes ☐ No ☐ (*explain*)  
**(USE MAP AND TABLE)**
63. Have you ever found ☐ or heard of ☐ leatherbacks **dead in the ocean**? Yes ☐ No ☐ (*explain*)  
**(USE MAP AND TABLE)**
64. Have you ever found ☐ or heard of ☐ leatherbacks **with nets/ropes in the ocean**? Yes ☐ No ☐  
**(USE MAP AND TABLE)**
65. What would you do if you found a leatherback stranded on the beach? \_\_\_\_\_



### LEATHERBACK TURTLE PERCEPTIONS



66. Compared to when you started fishing, do you think there are more turtles ☐, less ☐, or the same number of turtles ☐? I don't know ☐ (if more or less) Why do you think this?

---

(Note to interviewer: Try to determine what other impacts may be driving the trend)

67. On a scale from 1 to 5, Do you think there will always be leatherbacks in our waters?

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
There will be a time when there are no leatherbacks in the sea	There are going to be some leatherbacks	I am not sure	Probably always there will be leatherbacks	There will always be leatherbacks in the sea

Why? \_\_\_\_\_

68. Do you think having leatherbacks in the ocean is ... I don't know ☐

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not important	Slightly important	Important	Fairly important	Very important

Why? \_\_\_\_\_

69. Do you know if it is illegal to intentionally capture leatherbacks? Yes ☐, No ☐, I don't know ☐

Do you know if it is illegal to accidentally capture leatherbacks? Yes ☐, No ☐, I don't know ☐

Details \_\_\_\_\_

70. Are there any local customs, beliefs, legends or rituals or stories related to leatherbacks? Yes ☐, No ☐

(if yes) Please describe: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Where / from whom did you hear this? \_\_\_\_\_

71. Have you heard of marine reserves or protected marine areas? Yes ☐, No ☐, I don't know ☐

72. If yes, would you agree to have a marine reserve here?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

73. Could we ask for your contact information to contact you about dates and availability for future meetings in the next year?

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

Contact Information: \_\_\_\_\_

Name of vessel: \_\_\_\_\_

### **CONFIDENTIAL INTERVIEWER COMMENTS**

77. How open and honest did the fisher seem about answering bycatch questions?

Very open/honest ☐ Somewhat open/honest ☐ Not honest ☐

78. How interested and engaged did the fisher seem with interview?

Very interested ☐ Moderately interested ☐ Bothered/ Not interested ☐

79. How certain did the fisher seem about answers to numerical questions?

Very sure ☐ Reasonable sure ☐ Unsure ☐

80. How comfortable were you about the respondents' ability to discriminate between the species

Very comfortable ☐ Reasonable ☐ Not comfortable ☐

81. Why do you think this? \_\_\_\_\_

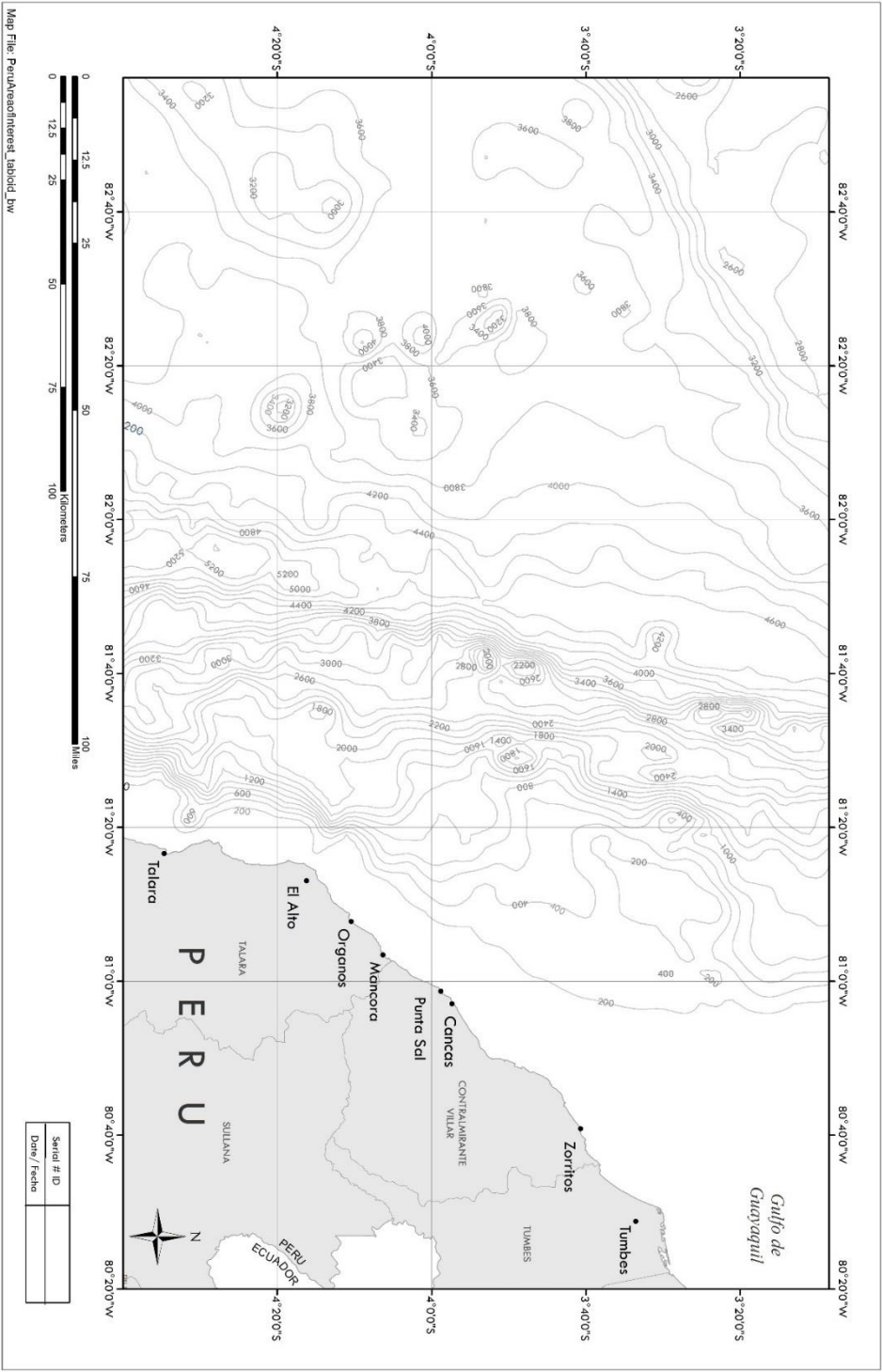
\_\_\_\_\_  
\_\_\_\_\_

82. Please indicate why (if any) questions were not asked \_\_\_\_\_

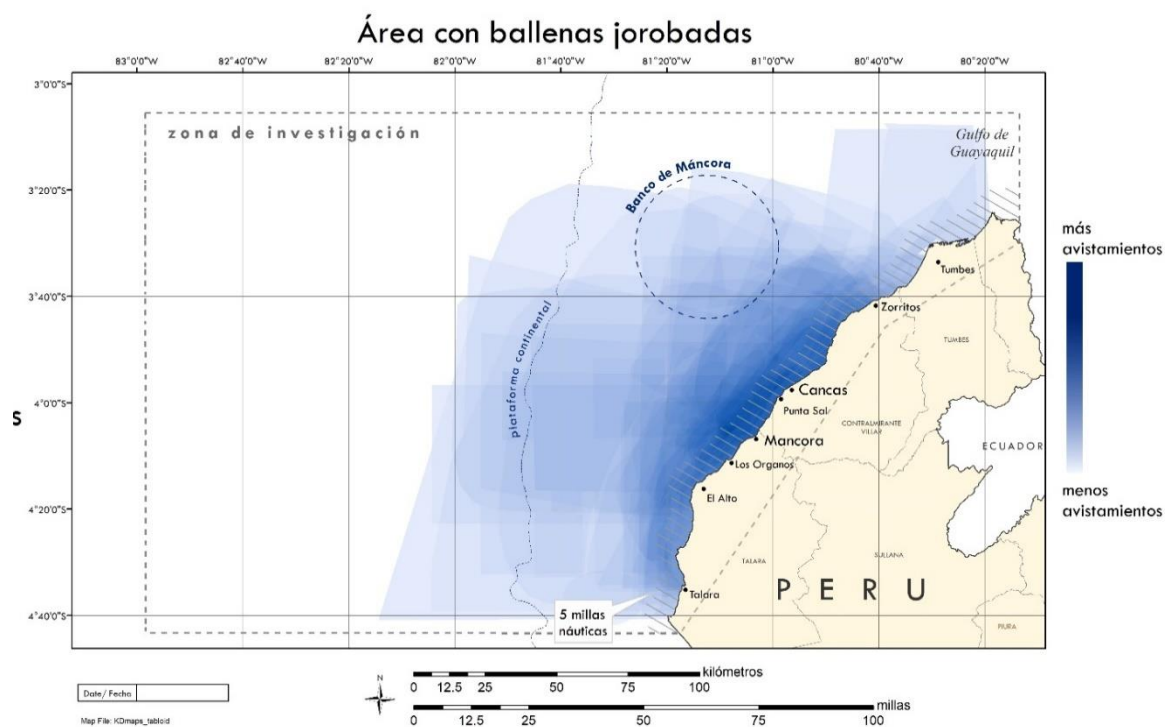
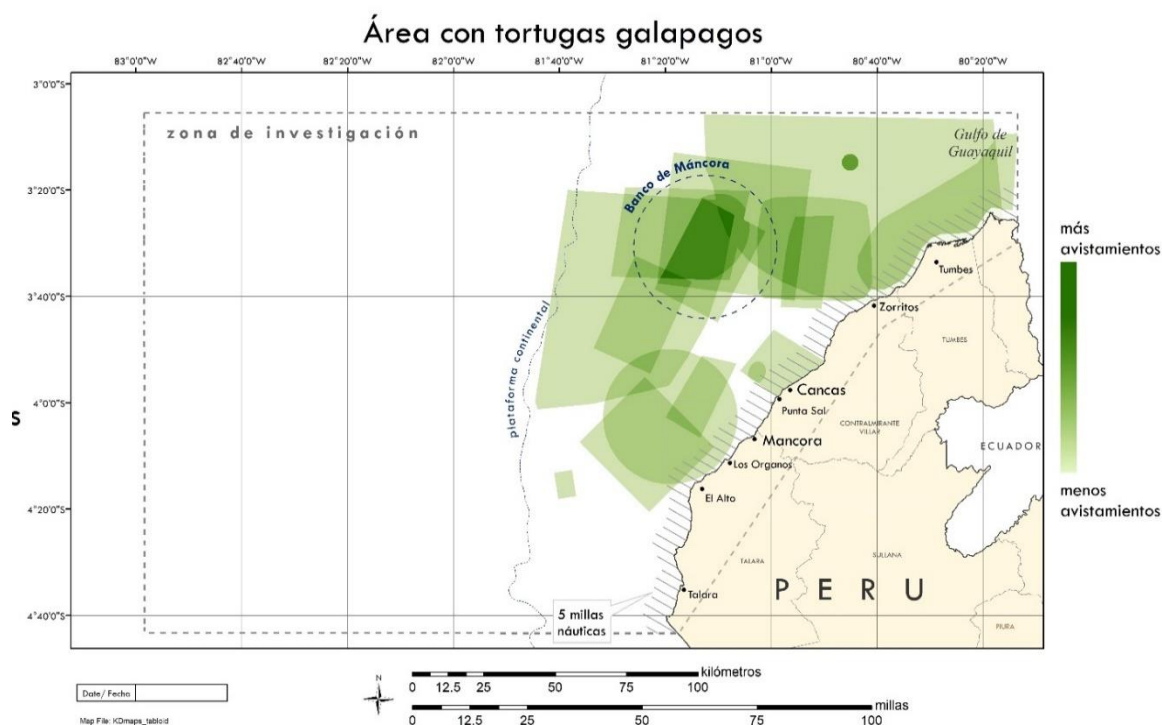


[illegible]

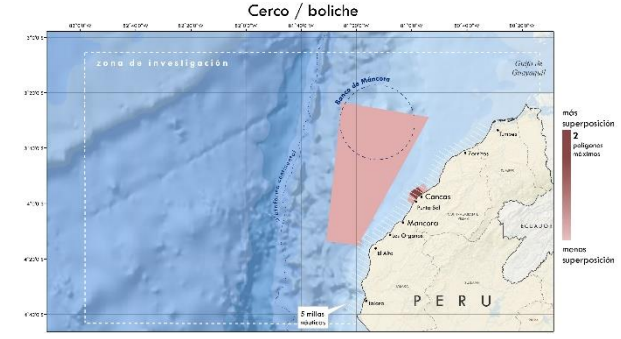
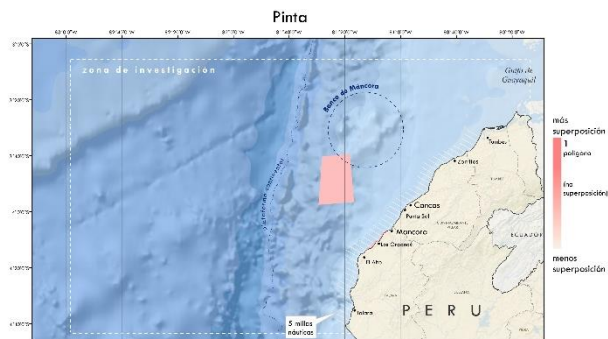
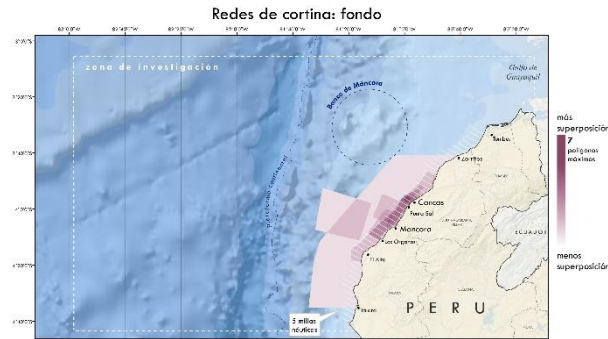
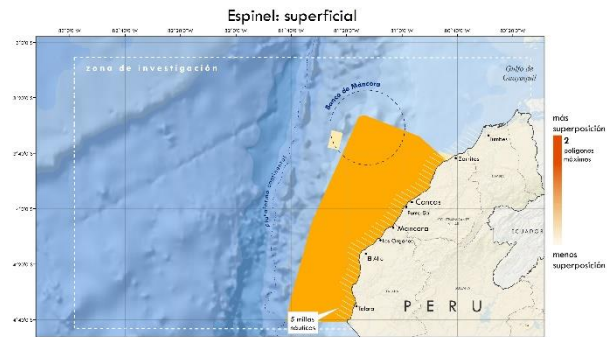
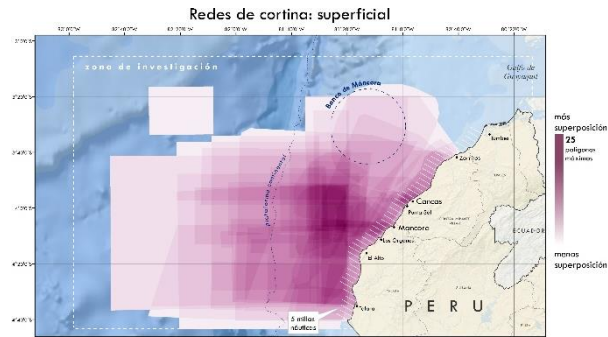
Appendix B: Study Area Map for PGIS interviews



## Appendix C: Overlapping polygons of perceived species habitat

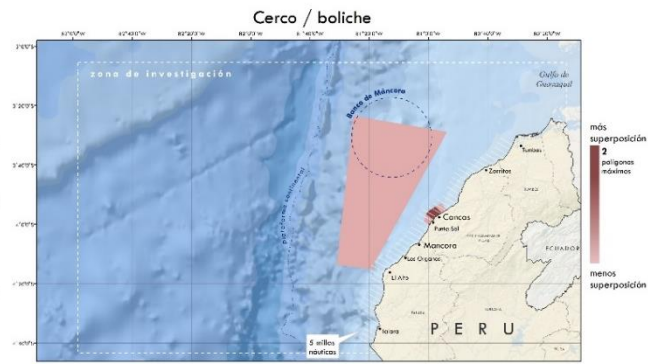
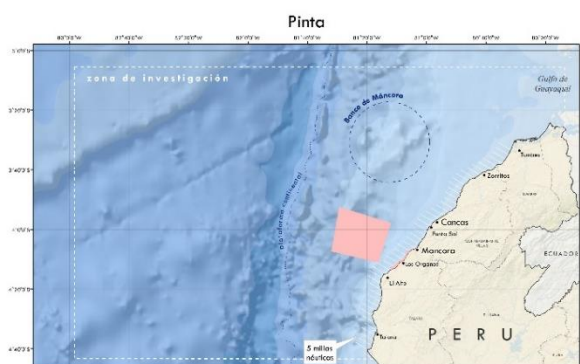
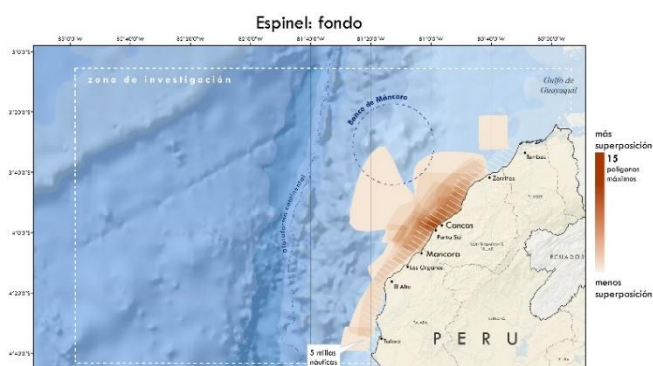
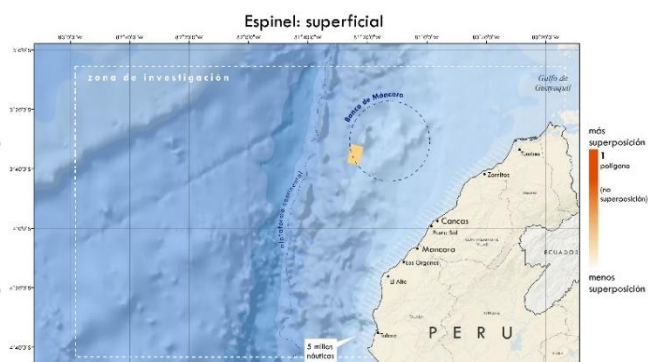
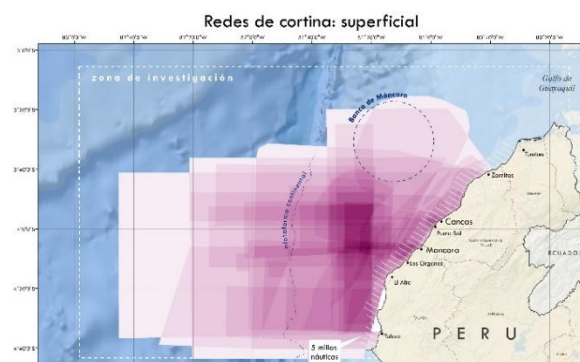


## Appendix D: Overlapping polygons of perceived fishing areas (December-May)





## Overlapping polygons of perceived fishing areas (June- November)



## Appendix E: Kernel Density Estimate Maps for Species Sightings

