

Supplementary material

Reconstructing Western Australian white shark (*Carcharodon carcharias*) catches based on interviews with fishers

S. M. Taylor^{A,C}, *J. M. Braccini*^A, *B. D. Bruce*^B and *R. B. McAuley*^A

^ADepartment of Primary Industries and Regional Development, Government of Western Australia, 39 Northside Drive, Hillarys, WA 6920, Australia.

^BCSIRO Oceans and Atmosphere, GPO Box 1538, Hobart, Tas. 7001, Australia.

^CCorresponding author. Email: steve.taylor@dpird.wa.gov.au

SURVEY OF COMMERCIAL SHARK FISHERS IN WESTERN AUSTRALIA, 2013

PART 2 – FACE TO FACE INTERVIEW

A: Administrative Section, Introduction

IN CONFIDENCE

Interviewer:
Interviewee
Fisher Id number:
Face-to-face or Phone:

Day/Mth	Start Time	Finish Time	Spoke with/Result	<u>Response Code</u>
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Fully responding	1
Full refusal	2
Part refusal	3
Full non-contact	4
Part non-contact	5

INTRODUCTION: Good morning/etc. from Western Australia Fisheries (Department) research about commercial fishing and sharks.... (ASK FEW QUESTIONS, ANSWERS CONFIDENTIAL, YOU CAN HAVE YOUR SAY ABOUT THE FISHERY AT THE END OF THE INTERVIEW, RESULTS MAY IMPROVE UNDERSTANDING OF WHITE SHARKS IN WESTERN AUSTRALIA).

Q1 (Firstly), can you tell me about your involvement in the demersal gillnet and longline fishery in WA. Are you/were you a boat owner AND skipper, skipper only, or owner only?

Boat owner	1
Boat owner and skipper	2
Skipper	3

Q2 Do you currently hold a licence in the demersal gillnet and longline fishery?

Yes	1
No	2

Q3 Are you still fishing in the demersal gillnet and longline fishery?

Currently fishing	1
Not currently fishing	2

Q4 Can you tell me in what year did you start fishing in the demersal gillnet and longline fishery? PROMPT FOR START AND FINISH YEARS. 'FISHING' REFERS TO THE USE OF GILLNETS AND LONGLINES TO TARGET SHARKS AND SCALEFISH. RECORD NUMBERS IN THE BOX BELOW. RECORD RANGE IF EXACT DATE UNKNOWN. RECORD TOTAL NUMBER OF YEARS IF START DATE UNKNOWN.

START	FINISH	OR	TOTAL NUMBER
<input style="width: 60px; height: 25px;" type="text"/>	<input style="width: 60px; height: 25px;" type="text"/>		<input style="width: 130px; height: 25px;" type="text"/>

Q5 Thinking about your entire career in the demersal gillnet and longline fishery, have you only worked/did you work on one shark fishing boat or more than one fishing boat? SAMPLING LICENCES SO NEED TO ENSURE INTERVIEWEE IS REFERRING TO A KNOWN LICENCE – REDUCE CHANCE OF DOUBLE COUNTING WHEN ONE OR MORE INTERVIEWEES MAY HAVE WORKED ON ONE BOAT. NEED TO ASSESS % TIME ONBOARD IF THERE IS MORE THAN ONE SKIPPER OF THE BOAT.

1 boat only	1
More than one boat	2

Q6(a) What was the name of the boat?

WRITE NAME ON LINE BELOW, IF MORE THAN ONE BOAT, PROMPT FOR NAMES AND APPROXIMATE DATES. FOR EACH BOAT, PROMPT FOR FISHING GEAR AND WHETHER FISHER WAS THE ONLY SKIPPER (OS), SHARED SKIPPER (SS) OR NON SKIPPER (NS). REPORT % OF TIME THEY WERE SKIPPER.

Boat name/ LFB	Boat size	Approx. dates (if >1 boat)	Fishing gear (GN/LL/WL/OTHER) GN (method,length,mesh)	Only skipper or shared skipper (SS/OS/NS)/%
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----

(b) Did you fish in every year or were there some years that you didn't go fishing? FISHING JUST REFERS TO THE DEMERSAL GILLNET AND LONGLINE FISHERY. IF ANSWER IS 2, PROMPT FOR YEARS.

- Fished every year (go to q.7) 1
- Didn't fish every year 2

(c) Years not fished _____

NOW GOING TO ASK YOU SOME QUESTIONS RELATING TO WHITE SHARKS. PLEASE REMEMBER THAT YOUR ANSWERS ARE CONFIDENTIAL. WHEN I MENTION CATCH, ONLY REFERRING TO SHARKS **CAUGHT** IN ANY TYPE OF FISHING GEAR SUCH AS GILLNETS, LONGLINES OR WETLINES. INCLUDES SHARKS THAT WERE RELEASED ALIVE AND THOSE THAT WERE KEPT OR DEAD. PLEASE DO NOT INCLUDE ACCOUNTS OF SHARK SIGHTINGS OR OCCASSIONS WHEN SHARKS WERE **NOT** CAPTURED IN FISHING GEAR.

Q7. Thinking back across your entire time in the demersal gillnet and longline fishery, has a white shark ever been caught while you were onboard the boat?

- Yes 1
- No (go to Part B) 2
- Unsure (go to Part B) 3

NOW GOING TO ASK YOU TO THINK ABOUT SOME KEY PERIODS IN THE FISHERY. YOU MAY OR MAY NOT HAVE CAUGHT WHITE SHARKS DURING THESE TIMES. TO HELP YOU THINK ABOUT THESE DATES, HERE IS A MEMORY JOGGER (GO THROUGH DATES AND PERIODS WITH THE FISHER. DATES ARE BEFORE 1975, 1975-1987, 1988-1996, 1997-2004, 2005-now).

Q8 (a). (i) Thinking back to the earliest time period, BEFORE 1975, was a white shark caught while you were onboard the boat?

- Yes 1
- No (go to Q8(b)) 2
- Unsure (go to Q8(b)) 3
- Not applicable 4

Q8 (a). (ii). In a typical year BEFORE 1975, how many white sharks, if any, were caught while you were onboard? WRITE NUMBER ON LINE BELOW. IF FISHER GIVES A RANGE, WRITE DOWN ALL NUMBERS. RECORD BY FISHING METHOD.

Q8 (b) (i). Thinking back to the period 1975–1987, was a white shark caught while you were onboard the boat?

- Yes 1
- No (go to Q8(c)) 2
- Unsure (go to Q8(c)) 3
- Not applicable 4

Q8 (b) (ii). In a typical year between 1975 and 1987, how many white sharks, if any, were caught while you were onboard? WRITE NUMBER ON LINE BELOW. IF FISHER GIVES A RANGE, WRITE DOWN ALL NUMBERS. RECORD BY FISHING METHOD.

Q8 (c) (i) Thinking back to the period 1988–1996, was a white shark caught while you were onboard the boat?

- Yes 1
- No (go to Q8(d)) 2
- Unsure (go to Q8(d)) 3
- Not applicable 4

Q8 (c) (ii). In a typical year between 1988 and 1996, how many white sharks, if any, were caught while you were onboard? WRITE NUMBER ON LINE BELOW. IF FISHER GIVES A RANGE, WRITE DOWN ALL NUMBERS. RECORD BY FISHING METHOD.

Q8 (d) (i) Thinking back to the period 1997–2004, was a white shark caught while you were onboard the boat?

- Yes 1
- No (go to Q8(e)) 2
- Unsure (go to Q8(e)) 3
- Not applicable 4

Q8 (d) (ii) In a typical year between 1997–2004, how many white sharks, if any, were caught while you were onboard? WRITE NUMBER ON LINE BELOW. IF FISHER GIVES A RANGE, WRITE DOWN ALL NUMBERS. RECORD BY FISHING METHOD.

Q8 (e) (i) Thinking about the period 2005 to now, has a white shark been caught while you've been onboard the boat?

- Yes 1
- No (go to Q8(e)) 2
- Unsure (go to Q8(e)) 3
- Not applicable 4

Q8 (e) (ii). In a typical year between 2005 and now, how many white sharks, if any, have been caught while you've been onboard? WRITE NUMBER ON LINE BELOW. IF FISHER GIVES A RANGE, WRITE DOWN ALL NUMBERS. RECORD BY FISHING METHOD.

Q9 (a) Thinking across your entire career, what was the most number of white sharks you caught in a year?
CODE U IF UNKNOWN.

Q9 (b) Can you recall what year this was? RECORD YEAR BELOW OR CODE U IF UNKNOWN/PROMPT FOR INFO

Q10. NOW I'D LIKE YOU TO THINK ABOUT THE FISHING GEAR USED WHEN A WHITE SHARK WAS CAUGHT. Were any of the white sharks you mentioned before caught using:

- | | | |
|--|--------|---|
| (a) Gillnets | Yes | 1 |
| | No | 2 |
| | Unsure | 3 |
| (b) Longlines | Yes | 1 |
| | No | 2 |
| | Unsure | 3 |
| (c) Wetlines (any hooks attached to gillnets, hand-lines, other) | Yes | 1 |
| | No | 2 |
| | Unsure | 3 |
| (d) Any other methods (record method below) | Yes | 1 |
| | No | 2 |

(e) **Which of the above methods caught the most white sharks?** (WRITE METHOD ON LINE BELOW)

Q11. Now want you to think about the broad regions where white sharks were caught. GIVE FISHER MAP OF FISHING REGIONS. HIGHLIGHT THAT WE ARE NOT INTERESTED IN FINE SCALE INFORMATION. Can you recall which, if any, of these regions you caught a white shark in? TICK WHICH REGIONS A CATCH WAS REPORTED IN.

- | | |
|--------------------|---|
| Yes | 1 |
| No (go to q13) | 2 |
| Unable (go to q13) | 3 |

Q12. Which region were the most sharks caught in? INSERT ASTERIX ON MAP IN REGION WITH MOST. RECORD REGION NUMBER BELOW

Q13. Thinking back to the time of year that white sharks were caught. Can you recall which season the MOST white sharks were caught in? Would you say Spring (Sep–Nov), Summer (Dec–Feb), Autumn (Mar–May), Winter (Jun–Aug) or Unsure. RECORD ANSWER ON THE LINE BELOW.

Q14. Can you recall the approximate size of white sharks caught? (RECORD TOTAL LENGTH IN METRES, OR FEET. ASK FISHER WHETHER NUMBERS REFER TO A TYPICAL SIZE OR THE SIZE RANGE (BIGGEST–SMALLEST) IF UNSURE, RECORD 'U' UNDER METRES LINE).

Metres -----

Feet -----

Q15. Would you say that the size of white sharks you catch now are larger than, about the same, or smaller than when you started fishing?

Larger	1
About the same	2
Smaller than	3
Unsure (go to q 3)	4

PART B. Now very interested to find out your views about white sharks and fisheries in general.

1. Would you say that the abundance of white sharks in WA today, in 2013, is greater than, about the same, or less than when you started commercial fishing for sharks?

Greater	1
About the same (go to q 3)	2
Less than	3
Unsure (go to q 3)	4

2. You indicated that the abundance of sharks in 2013 is greater than/less than when you started fishing. What reason, if any, do you base this change on? RECORD RESPONSE ON LINE AND CODE TO THE FOLLOWING CATEGORIES. RECORD MAIN REASON. USE "ANYTHING ELSE" QUESTION TO RECORD 2ND REASON IF AVAILABLE.

Number of white sharks caught by myself or my boat	1
Number of white sharks caught by other commercial fishers.....	2
Number of white sharks sighted by myself or my boat.....	3
Number of white sharks sighted by other commercial fishers.....	4
Fishing restrictions (commercial and recreational).....	5
Number of potential prey for white sharks (sea lions, fish etc.).....	6
Aerial surveys/sightings at beaches.....	7
Media articles.....	8
Other.....	9
Unsure.....	10

3. The Department is interested in evaluating the reporting of white shark interactions in commercial logbooks. I am going to read out a statement and then I want you to rate your agreement/disagreement. REMEMBER THAT YOUR RESPONSE IS CONFIDENTIAL.

“White shark catch data reported in daily logs provide reliable information on the total number of white sharks caught in Western Australian Temperate Demersal Gillnet and Demersal Longline Fisheries”. WOULD YOU SAY YOU?

- Strongly agree (go to q.5) 1
- Mildly agree (go to q.5) 2
- Neither agree or disagree (go to q. 5) 3
- Mildly disagree 4
- Strongly disagree 5

4. You indicated that you mildly disagree/strongly disagree that white shark catch data reported in daily logs provide reliable information on the total number of white sharks caught. What reason, if any, do you base this on? RECORD RESPONSE ON LINE AND CODE TO THE FOLLOWING CATEGORIES. RECORD MAIN REASON. USE “ANYTHING ELSE” QUESTION TO RECORD 2ND REASON IF AVAILABLE.

- Some commercial fishers deliberately do not report all their white shark interactions.....1
- Some commercial fishers deliberately over-report their white shark interactions.....2
- Logbooks are too difficult to fill out.....3
- Fishers can't be bothered to fill out.....4
- Other.....5
- Unsure.....6

5. Could you also rate your agreement/disagreement with the following statement?

“I am generally happy with the way Fisheries in WA are managed”

- Strongly agree1
- Mildly agree2
- Neither agree or disagree.....3
- Mildly disagree.....4
- Strongly disagree.....5

IF ANSWER WAS MILDLY DISAGREE OR STRONGLY DISAGREE, PROMPT FOR THE REASON AND RECORD ON LINES BELOW

6. Now your chance to have your say, do you have anything else you would like to say about

(a) Sharks

(b) Fisheries

7. Would you like to receive a summary factsheet which highlights the results from this survey? NO INDIVIDUAL DATA ANALYSED. ALL DATA ARE AGGREGATED.

Yes.....1

No.....2

If yes, record email address here _____

8. Would you be willing to be contacted again if I/Department have any further questions relating to commercial fisheries and sharks?

Yes.....1

No.....2

9. Some fishers have recorded information on white shark catches and sightings in personal diaries or logs. Have you ever recorded information on white sharks in a personal diary or log?

Yes1

No (go to q11).....2

10. Would you be willing to share this white shark information with me? HELP BUILD A PICTURE ON THE POPULATION OF WHITE SHARKS IN WA. CONFIDENTIAL INFORMATION.

Yes1

No2

11. Finally, could you please tell me your age? RECORD ON LINE BELOW

THANK AND END INTERVIEW.....
