**Global fishing gear loss analysis: Amounts, causes and management options**

**Gear Type: Trawl Nets**

**1. Background information**

1.1 Respondent’s number: *(randomly generated for each survey)*

1.2 Date of interview (dd/mm/yyyy): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.3 Location where fishing occurs (general): \_\_\_\_­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.4 Researcher name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.5 Respondent’s name\*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.6 Respondent’s email\*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.7 Respondent’s phone number\*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*\*Reminder: All information collected is treated anonymously, with respondent contact information only collected for follow-up purposes to clarify any responses, if required.*

1.8 Length of current vessel (meters): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.9 Tonnage of current vessel (tonnes): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.10 Holding capacity of fish for current vessel (tonnes): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.11 Engine power of current vessel (kW or HP): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.12 Typical number of crew members on current vessel, including skipper: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.13 Position on vessel, *please circle all that apply*

Skipper Captain First mate Crew member Owner Other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.14 How many years have you been working in your fishery? Please circle

0-4 5-9 10-14 15-19 20-24 25-29 30+

1.15 Do you belong to a fisher-based organization such as a fisher’s cooperative or association? Please circle

Yes No

**2. Primary target species, gear type(s) used and days fished**

2.1 *In the table, please identify 1) the usual trawl net types\* that you use to fish target species, 2) estimate the usual number of days that you fish in a season, and 3) whether licenses or permits are required.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Primary target species** | **Primary gear type used\*** | **Days fished per season** | **License (Y/N)** |
| **Spring** | **Summer** | **Fall (Autumn)** | **Winter** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

\*TBB=Beam trawls, OTB=Single boat bottom otter, OTT=Twin bottom otter, OTP=Multiple bottom otte, PTB=Bottom pair, OTM=Single boat midwater otter, TSP=Semipelagic, D=Demersal, P=Pelagic (midwater), O=Other (please specify)

2.2 *How much money would your vessel’s catch be worth from a typically good fishing trip? I.e. total payment received for the catch for the vessel. Please estimate.*

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

2.3 *How much money would your vessel’s catch be worth from a typically bad fishing trip? I.e. total payment received for the catch for the vessel. Please estimate.*

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

**3. Effort**

3.1 *On a typical trip, how many days or hours does your vessel usually stay at sea?*

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

3.2 *On a typical trip, how many hours does your vessel usually fish (with trawl gear deployed/towing) in a day (24-hour period)?*

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

3.3 *Does your vessel usually fish during the day, at night, or both day and night? Please circle*

 Daytime only Night only Both day and night

3.4 *How long is a typical trawl shot/tow duration (time)?*

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

3.5 *How many trawl shots/tows does your vessel usually make in a day (24-hour period)?*

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

3.6 *What is the usual depth range where your vessel fishes (meters)?*

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

3.7 *What is the typical towing speed?*

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

**4. Gear characteristics**

4.1 *Please specify if you use single or multiple nets. Please circle*

Single Two nets Three nets Four nets

*What is headline length of each trawl net (meters)?*

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

4.2 *What is the length (wing end to cod end) of a typical trawl (meters)?*

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

**5. Amount of gear damaged and/or lost**

5.1 *Please indicate the usual number of nets that are damaged for a corresponding number of trips.*

*\_\_\_\_\_\_\_* net(s) is/are usually damaged every *\_\_\_\_\_\_\_* trip(s)

5.2 *When nets are damaged, what proportion/amount of the nets are typically damaged? Please circle*

Less than 25% of the net Between 25-50% of the net Between 50-75% of the net

Between 75%-100% of the net Full net

5.3 *Please indicate the usual number of nets that are lost for a corresponding number of trips.*

*\_\_\_\_\_\_\_* net(s) is/are usually lost every *\_\_\_\_\_\_\_* trip(s)

5.4 *When nets are lost, what proportion/amount of nets are typically lost? Please circle*

Less than 25% of the net Between 25-50% of the net Between 50-75% of the net

Between 75%-100% of the net Full net

5.5 *Does the vessel report when fishing gear is lost? Please circle*

 Yes No I do not know

5.5.1 *If Yes to 5.5, how or to whom does the vessel report lost gear? Please circle all that apply, or fill in additional comments in the space provided if none apply.*

Logbook Management agency Other fishers in area (e.g. to avoid gear fouling)

Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.5.2 *If No to 5.5, why do you think the vessel does not report lost gear?*

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

5.6 *Who is responsible for reporting lost gear? Please circle all that apply or fill in additional comments in the space provided if none apply*.

Skipper/captain First mate Crew member I do not know

Lost gear reporting is not required in my fishery Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.7 *If fishing gear is lost or damaged, who pays to replace or repair the gear? Please circle (if these categories are the same, please circle both e.g. vessel owner is also skipper/captain):*

Skipper/Captain Vessel owner Corporation/company that owns the vessel as part of a fleet

Fishing cooperative/association Fisher responsible for gear loss or damage

Entire fishing vessel crew I do not know Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6. Lost gear Retrieval**

6.1 *When fishing gear is lost, does the vessel usually attempt to retrieve it? Please circle*

 Yes No I do not know

6.1.1 *If Yes to 6.1, how often is the vessel usually able to successfully retrieve lost nets? Please circle*

Never Rarely Sometimes Frequently Always I do not know

6.1.2 *If Yes to 6.1, does the vessel use on-board technologies such as navigation systems to return to where the gear was lost?*

 Yes No I do not know

6.2 *Does the vessel have retrieval tools such as grapnels onboard to retrieve lost gear? Please circle and, if yes, specify the types of tool(s)*

 Yes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ No I do not know

**7. Causes of fishing gear loss**

7.1 *When the vessel loses fishing gear, what are the main causes of the gear loss? Please circle how often the following usually occur and result in gear loss*

Net snagged on a bottom obstruction Never Rarely Sometimes Often Always

Bad weather Never Rarely Sometimes Often Always

Damage by wildlife Never Rarely Sometimes Often Always

Faulty or damaged gear Never Rarely Sometimes Often Always

Operator error Never Rarely Sometimes Often Always

Gear not properly stored on-board Never Rarely Sometimes Often Always

Conflict with other vessels Never Rarely Sometimes Often Always

Gear discarded overboard, e.g. damaged gear Never Rarely Sometimes Often Always

Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Never Rarely Sometimes Often Always

7.2 *What practices does your vessel employ to minimise or prevent fishing gear loss? Please circle how often your vessel usually engages in the following practices to minimise or prevent gear loss*

Avoid fishing in areas where nets might be snagged Never Rarely Sometimes Often Always

Communicate with other vessels (e.g. gear locations) Never Rarely Sometimes Often Always

Avoid fishing in overcrowded areas Never Rarely Sometimes Often Always

Avoid fishing in bad weather Never Rarely Sometimes Often Always

Gear marking/tracking technologies Never Rarely Sometimes Often Always

Train crew members in gear management Never Rarely Sometimes Often Always

Maintain and/or replace old and/or damaged gear Never Rarely Sometimes Often Always

Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Never Rarely Sometimes Often Always

**8. Net repairs**

8.1 *How long do your vessel’s nets typically last before they need to be replaced?*

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

8.2 *How often are your vessel’s nets typically repaired?*

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

8.3 *Does your vessel repair its nets at sea?*

 Yes No

 8.3.1 *If yes to 8.3, on a typical trip, how many times are nets repaired?*

 *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

8.3.2 *If yes to 8.3, what is the usual length and width of damaged netting/net repair fragments leftover after repairs? Please estimate length and width.*

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

8.3.3 *If yes to 8.3, what does your vessel usually do with damaged netting or net repair fragments? Please circle how often this behaviour occurs*

Store them on-board for later shore disposal Never Rarely Sometimes Often Always

Save repair fragments for future net repairs Never Rarely Sometimes Often Always

 Discard them overboard Never Rarely Sometimes Often Always

Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Never Rarely Sometimes Often Always

**9. Fisheries management plans, observer programs, infrastructure**

9.1 *Are you aware of any fisheries management plans, regulations or similar that specifically mention lost or discarded fishing gear? Please circle*

Yes No

8.2 *Do fisheries observers in your fishery report lost or discarded fishing gear? Please circle*

 Yes No I do not know There are no fisheries observers for my fishery

9.3 *Do requirements exist for reporting lost fishing gear in fishing vessel logbooks? Please circle*

 Yes No I do not know

9.4 *Are there any places to deposit old or no longer usable fishing gear at the ports where you work from?*

Yes No I do not know

9.5 *How is fishing gear stored on-board your vessel when not in use? Please circle all that apply.*

Tied down on deck Stored in specific compartments/chambers on-board

No gear storage protocols exist on-board Other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9.6 *Does your vessel have places to store old/damaged fishing gear no longer available for use? Please circle*

 Yes No I do not know

**10. Perceptions**

10.1 *Are you concerned about lost or discarded fishing gear? Please circle*

Not at all concerned Somewhat concerned Concerned Very concerned

10.2 *How important to you are the following issues that result from lost or discarded fishing gear in your fishery? Please circle*

Hazards to navigation Not important Somewhat important Important Very important

Economic losses Not important Somewhat important Important Very important

Impact on fish stocks Not important Somewhat important Important Very important

Damage to fishing gear Not important Somewhat important Important Very important

Harm to the environment Not important Somewhat important Important Very important

Entanglement of wildlife Not important Somewhat important Important Very important

Negative public perception of fishery Not impt Somewhat important Important Very important

Negative impacts on tourism Not important Somewhat important Important Very important

Costs of clean-up activities Not important Somewhat important Important Very important

Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Not important Somewhat important Important Very important

**11. Gear marking**

11.1 *Do requirements exist for the marking of fishing gear in your fishery? Please circle*

 Yes No I do not know

11.2 *Does your vessel mark its fishing gear? Please circle*

 Yes No

 11.2.1 *If Yes to 11.2, please specify how the fishing gear is marked in the space below*

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

**12. General comments**

Please provide any additional information, feedback, or general comments you would like to share related to this survey. We also welcome links or recommendations to any relevant reports, shared here or by email to Kelsey.Richardson@csiro.au . Please write in blank space below.