

E-training tool descriptor

Supra-category: IOTC ROS Scientific Field Observer Training (IOTC ROS SFO)

Category: Longline onboard data collection and recording (TR19)

The following case study is designed to familiarized observers with data gathering processes and priorities for the pelagic longline fisheries, the type of information gathered and how to capture it into the relevant IOTC ROS data collection forms. This exercise also aims to raise observers awareness on work and sampling protocols to follow when deployed on-board a longliner.

The narrative of the exercise is in three formats:

1. explanatory narratives for the exercise to provide certain information in situations which the observer would be expected to record (*provided in italics*); and
2. extracts from an observer's daily notebook (which they would be expected keep onboard);
3. information that an observer would record while on deck or sampling.

As far as possible, the exercise and information are designed to be as realistic and practical to what an observer is likely to experience in the field.

IOTC ROS Guidelines to be followed

Guidelines for observers on pelagic longliners.

Data forms to be filled in

FORM 1-LL	IOTC REGIONAL OBSERVER SCHEME VESSEL AND TRIP INFORMATION SHEET
FORM 2-LL	IOTC REGIONAL OBSERVER SCHEME LONGLINE GEAR SPECIFICATIONS
FORM 3- LL	IOTC REGIONAL OBSERVER SCHEME LONGLINE FISHING EVENT
FORM 4-LL	IOTC REGIONAL OBSERVER SCHEME LONGLINE FISHING EVENT - CATCH DETAILS
FORM 5-LL	IOTC REGIONAL OBSERVER SCHEME LONGLINE – CATCH DETAILS - BIOMETRIC INFORMATION
FORM 6-LL	IOTC REGIONAL OBSERVER SCHEME FISHING EVENT – CATCH DETAILS – BIOLOGICAL DATA AND SAMPLE COLLECTION
FORM 7-LL	VESSEL TRANSHIPMENT

Reports to be completed

VESSEL PRE-SEA SAFETY CHECK REPORT
OBSERVER DEPLOYMENT REPORT
OBSERVER WEEKLY REPORT

Case Study: Observer deployment on a Pelagic Longline Vessel

You were briefed by your coordinator on the **18/07/2022**.

The next day (**19/07/2022**) you leave home 06:00 (local time) and you head to the Dikkowita port (Sri Lanka) for deployment onboard FV Imula0146CBO.

You meet the captain upon your arrival to the vessel, and you ask him to provide you with [vessel specific details](#). You also request permission to conduct the vessel “pre-sea safety” check inspection in the company of a crew member. At the end of the visit, you use the information you’ve collected on your [observer notebook](#) to fill in the [Vessel pre-sea safety check form](#).

TASK 1 Fill in vessel pre-sea safety check form using your [observer notebook](#).

After confirming that the vessel meets minimum safety requirements, you embark the vessel and ask to be taken to your cabin to prepare your living quarters and work equipment.

You start by setting all your personal work devices (watch, laptop, voice recorder, digital camera/smartphone) to UTC time. Then, you present yourself at the bridge, where the captain informs you that the vessel will be sailing in a few hours.

Shortly after leaving the harbour, you prepare your [observer deployment report](#). You go to the bridge and ask the skipper to send the report to your coordinator by email. He is happy to do it and tells you that you can communicate with your coordinator when you want.

TASK 2 Complete [observer deployment report](#) using information from the text and from your [observer notebook](#).

You check vessel’s electronic equipment with the captain, and start filling IOTC Form 1-LL, with the information you registered on your [notebook](#) on the 19/07/22.

TASK 3 Start filling IOTC Form 1-LL using information from your [observer notebook](#).

On the following day (**20/07/2022**), you inspect vessel fishing gear and you fill in the IOTC Form 2-LL, with the information you have registered on your [notebook](#).

TASK 4 Fill in IOTC Form 2-LL using information from your [observer notebook](#).

Two days steaming to the fishing grounds, on the morning of the **22nd July 2022** you notice the crew start removing bait boxes from the hold. They remove the plastic tape from the boxes and throw it over the side. The bait is left out on the deck to defrost, and you note a mixture of squid and fish bait boxes. You have a closer look and you see that the fish is mackerels. You can’t confirm the species, since these aren’t written on the boxes.

After talking to the bosun (deck officer) about the gear setup, he tells you that they plan to set a total of 1500 hooks.

- *The first 500 branch lines will be the shorter ones with weighted swivels and be baited with whole squid only and have light sticks attached. These are to target **swordfish** in the night.*
- *The last 1000 hooks will be the longer branch lines baited with alternative mix of whole squid and whole fish bait. These are to **target tuna** (yellowfin and bigeye) as these hooks will be set pre-dawn and hauled after dawn.*

Later that afternoon, as the sun sets, the crew wake up, have something to eat and they walk to the stern of the vessel where they start preparing the fishing buoys, and branch lines (tubs), and the bait.

After checking in on the bridge, the fishing master indicates that he will start setting an hour after sunset at approximately 19:00 vessel time (UTC + 5h30). He mentions that the line setter is still broken, and he will ride the line out at about 9 knots.

*On the morning of the **23rd July 2022**, you go up to the bridge at 05:00 vessel time (UTC + 5h30) to collect the information you are missing on the setting of the line.*

You prepare your gear for the day, sharpen your pencil and ready your slate and head down to the galley. You sit down with the crew, break your fast and fill up your water bottle.

The crew start gathering on the deck, some preparing the hydraulic machinery and some keeping watch for the first radio-buoy which appears quickly on the horizon shortly after a crew member points to it with a straight arm.

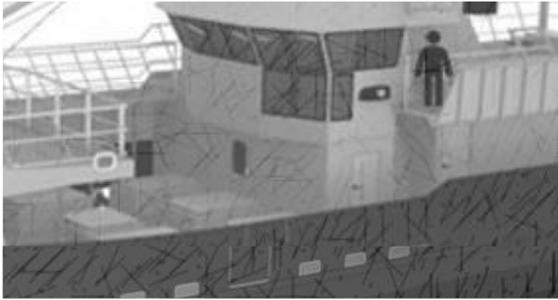
You record hauling information on your notebook, while you wait for the radio-buoy to be brought onboard.

The radio-buoy is brought onboard at 06:30 vessel time (UTC + 5h30), and the first section of hooks hauled.

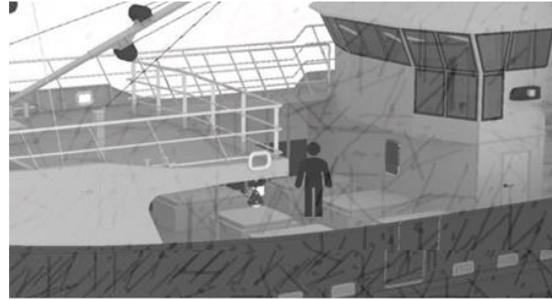
TASK 4 **Start filling IOTC Form 3-LL using information provided in the text and in the [observer notebook](#).**

To monitor the catch on both branch line types and make time to collect biometric information on the catch you decided to use two main sampling strategies.

1. *To monitor for catch composition 50% of each branch line type, during line hauling observation periods. For this, you are to monitor for catch composition batches of 50 hook sections at a time and to select them randomly during the hauling process.*
2. *To sample a fixed number of all catch species up to a maximum of 50 individuals per species, during biometric sampling periods (i.e., when you aren't monitoring the line for catch composition). The selection of the individuals is to be done randomly as they are caught.*



Observer placement while monitoring the line for catch composition during line hauling observation periods.



Observer placement while conducting biometric sampling.

You notice that the last radio buoy is brought onboard at 17:45 vessel time (UTC + 5h30). When you finish sampling the set you remove your overalls and you head to the bridge to collect hauling end position (06° 33' 19" N / 077° 49' 30" E).

TASK 5 Finish filling IOTC Form 3-LL using information provided in the text and in the [observer notebook](#).

You get the [sampling slate](#) you used to record on-deck observations and biological sampling records and you transfer the information to the respective IOTC data collection forms.

TASK 6 Fill in IOTC Form 4-LL and Form 5-LL using information provided on the [sampling slate](#).

- **Add specimens sampled biometrically to catch composition table (Form 4). Don't forget to mention that information was collected during the biometrical sampling period and specify the sampling method for the collection of catch composition.**
- **If you collect biometric information from individual specimens caught during line hauling observation periods (e.g., placed aside by the crew), you should add this information in Form 5. Don't forget to indicate the work period the information was collected (in this case LH), and to specify the sampling method for the collection of biometric information.**

The fishing master sets course at 135° at 10 knots to his planned position to set the second line.

The fishing alarm sounds at 00:00 vessel time (UTC + 5h30). You get up and go to bridge to record positions on your [notebook](#). You monitor the baiting and setting operation for three sections between radio buoys, you go to the bridge and confirm the speed of the vessel is still 9 knots, and you go to sleep at 02:00 vessel time (UTC + 5h30).

The line hauling started on the **24/07/2022** at 06:00 vessel time (UTC + 5h30) from the last radio buoy set. You didn't monitor the hauling of the first radio buoy and of the first five hook sections. You collect start line hauling position from the skippers' fishing book.

You notice that the weather has been deteriorating for the last hours. The skipper tells you he doesn't expect a good catch due to the presence of strong currents. You decide to adapt the sampling routine to collect as much biometric data as possible.

The last radio buoy is brought onboard at 18:45 vessel time (UTC + 5h30). Catches were not good and with the weather deteriorating, the skipper decided to steam south for approximately 300 nm.

When you finish sampling you remove your overalls, have lunch with the crew and start transferring data from your notebook and [sampling slate](#) to the data collection forms.

TASK 7 Fill in IOTC Form 3-LL, Form 4-LL and 5-LL set with the information provided in the text, registered in the [observer notebook](#) and in the observer [sampling slate](#).

The **25 July 2022**, was spent in transit to new fishing area with a course of 170° and a speed of 9 knots. The crew is working on repairing lines and branch lines.

The following day **26 July 2022**, the fishing alarm sounds at 01:00 and you go to the bridge to record positions. You monitor the baiting and setting operation for 500 hooks and you go to bed one hour and half later.

During the day, you prepare your [weekly report](#) and you ask the skipper to send it to your coordinator by email.

TASK 8 Complete [Observer Weekly Report](#).

On the 27/07/2022, you wake up and you go to the bridge to collect end setting position and time from skippers fishing logbook.

Fishing alarm sounds at 13:00, you finish lunch quickly and you head out to the fishing deck to start sampling the line. You decide to follow the same sampling routine as for the 1st set, alternating between exhaustive monitoring sections of 50 branch lines hauled with biometric sampling when not monitoring the line being hauled.

TASK 9 Fill in IOTC Form 3-LL, Form 4-LL and 5-LL set with the information provided in the text, registered in the [observer notebook](#) and in the observer [sampling slate](#).

On the 28/07/2022 you wake up and notice that the vessel is sailing due NE. You go for breakfast and the cook tells you that a crew member got injured during the night and needs to be taken to land for medical assistance.

The vessel arrives to the Dikkowita harbour the 28 July 2022 at 03:30 and the injured crew member is taken from the vessel to the hospital.

You phone your coordinator and inform him that you are in port and that the vessel is expected to leave only in one week time. Your coordinator instructs you to disembark the vessel and to

present yourself at the offices of the national observer programme at 09h00. You complete your IOTC Form 1-LL, you pack your personal, safety and work equipment and disembark at 08:30.

TASK 10 Complete IOTC Form 1-LL with the information provided in the text.



VESSEL INFORMATION

Identification

Vessel Name: **IMULA0146CBO**

Vessel Identifiers:

IOTC: 17296

TUVI¹: 44405

IMO: -

Country: **Sri lanka**

Flag: **Sri lanka**

Owner

Owner: **Director, Horizon Harvest (PVT) LTD**

Owner address: **141/3,
WIJEKUMARATHUNGA MW, POLHENGODA,
COLOMBO 05**

Owner email: Fishing@horizonharvest.co.sl

Specifications

Type: **Longliners**

LOA: **30.6 m**

GRT: **-**

GT: **106**

Gear: **Drifting longline**

Hull: **Wood**

Autonomy: **15 days**

Operator

Operator: **Director, Horizon Harvest (PVT) LTD**

Operator address: **141/3,
WIJEKUMARATHUNGA MW, POLHENGODA,
COLOMBO 05**

Operator email: Fishing@horizonharvest.co.sl



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கடற்பொழில் நீரியல் வளங்கள் அபிவிருத்தி அமைச்சு
MINISTRY OF FISHERIES AND AQUATIC RESOURCES DEVELOPMENT



Registration

Port of registration: **Dikkowita**

Registration number: **Imula0146CBO**

Vessel Contact Details

IRCS: **4SF5553**

Satellite phone: **0087077322831**

Email: imula0146CBO@amosconnect.com

MMSI: **235 762000**

Other Vessel Specifications

Hull material: **Wood**

Autonomy: **15 days**

Fishing Licence

Species: **Tuna and tuna like species**

Licence period: **2021-07-17 to 2022-07-16**

Vessel Compliment

Skipper : **Mr Ranil Rajapaksa**

Skipper nationality: **Sri Lanka**

Fishing master: **same as skipper**

Crew number: **12**

Main engine: **Caterpillar 3516C IMO II
(1650bhp)**

Fish storage: **Refrigeration chamber 0° to -
30°C (30 mT) + blast freezer -30°C (1mT)**

¹ Tuna Unique Vessel Identifier

OBSERVER NOTEBOOK

DATE **19 JULY 2022**

Note: all dates and times have been recorded in the notebook in UTC

DEPLOYMENT DETAILS

Harbour Dikkowita (07° 00' 20" N / 079° 52' 02" E)

Arrive at vessel 02:30

Introduced to Mate/Bosun Mr Jaura Bindu, and to the

Vessel Skipper and fishing master Mr Ranil Rajapaksa

Request Pre-sea Inspection before embarkation. Accompanied by Mr Jaura, points noted:

- Safety Certificate In date and issues by Sri Lanka Maritime Safety Authority and vessel certified for 14 crew.
- Flares both rocket and smoke (in-date) located in cupboard below chart table. Expire on 01 January 2025.
- Automatic Kannad EPIRB (battery expiry date May 2025) located outside starboard bridge door in float free holder.
- McMundo S5A SART (battery expiry date May 2025) located inside the bridge next to the starboard door in float free holder.
- First aid box in skipper's cabin, skipper also medical officer
- One life raft (not in date or capacity for crew and observer) Make "Viking 10" next service date was due on 12/2017. Mr Jaura indicated that a new life raft had been ordered and was due to arrive today. (Photo taken P1)
- Life Jackets Total of 25, flexible foam and all SOLAS approved. One located at each bunk (15-bunks) and 10 in a box located at the muster station behind the bridge next to the life raft.
- Fire Extinguishers all serviced in May 2022 and painted red and located:
 - CO2 1-located inside galley door and 1-located in mess hall just outside galley
 - Foam/water located in each corridor to accommodation (3-in total)
 - Foam and CO2 at entrance to engine room. Apparently more inside engine room but not seen.
 - Foam outside bridge door
 - CO2 inside bridge door

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- Life Buoys/Rings (6 in total, free release)
 - Located each side of bridge with smoke and light markers attached
 - 2 located on either side of stern with no markers attached
 - 1 located in front of the line hauler on starboard side with no markers attached
 - 1 located on bow rail with smoke and light marker attached
- No emersion-suits onboard
- Radio and communication equipment includes:
 - VHF, HF and SSB MF located in cupboard on back of the bridge
 - MMSI No. 235 762000 located in cupboard on back of the bridge
 - NAVTEX located in the small chartroom behind the bridge
 - Inmarsat terminal for email and Satellite phone located in the FM cabin behind the bridge.

All communication equipment appeared to be in working order and an email sent to office to confirm email contact.

Staying on officers' deck below the bridge, on a small cabin, neat and clean with a small working desk. Well ventilated. Was cooks cabin.

A Viking 15 life raft certified for 15 persons was delivered at 06:30 on 19th July 2022. It was installed with the hydrostatic release in place (photo P2).

EMBARKATION AND DEPARTURE DETAILS

Embarked at 02:30 at the same berth.

Vessel sailed at 07:30.

Shortly after leaving the harbour went over the vessel's electronic equipment with the skipper and noted;

- 2- GPS units one on bridge console and one in the chart room
- VMS (Argos) in cupboard with radios. Light switch showed it was on
- One radar on the bridge
- One track plotter was combined with the skipper computer
- One Echosounder

- No sonar fitted
- No current meter fitted
- No bathythermographs
- One SST gauge was situated on the bridge console
- A weather facsimile in the chart room
- Fisheries information unit in the chart room

No familiarisation tour was offered as the observer had been around the vessel with the Mate during the pre-sea inspection, but the skipper sounded the emergency alarm for the observer to be familiar with.

Vessel emergency evacuation and muster station lists are displayed in the bridge, cabins and corridors.

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DATE **20 JULY 2022**

FISHING GEAR DETAILS

- The vessel had a line setter situated on the stern (photo taken P3); however, the hydraulic pipe was broken and the equipment was not used.
- No bait casting machine was present.
- The line hauler was situated on the starboard side forward on the working deck (photo P4).
- The mainline was stored on a drum just forward of the bridge (photo P5) with approximately 100 km of 6 mm monofilament nylon line.
- Branch lines were stored large rectangular bins (or tubs), approximately 50 per bin (Photo P6) There were two branch line configurations.

The first branch line configuration was 35 m long made up of three sections;

- 1st section was a 3-strand nylon cord of 3 mm diameter and 20 m length
- 2nd section was a 13 m length of 3 mm diameter monofilament nylon (the first and second section were joined with a stainless steel swivel)
- 3rd section consisted of 2 m of 2 mm diameter fluorocarbon monofilament Cremona (red in colour)
- The second and third sections were joined with a lead weighted swivel weighing 6 g)
- The hook was 14/0 stainless steel circle-hook crimped directly onto the line.
- Battery powered; reusable light sticks (green in colour) were attached approximately 1 m above the hook.

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The second branch line configuration was 40 m long made up of four sections;

- The first was a length of 20 m of 3-strand nylon cord 3 mm diameter
- The 2nd was a 15 m length of 3 mm diameter monofilament nylon (the first and second section were joined with a stainless steel swivel)
- The third section consisted of 3 m of 2 mm diameter lead weighted wire covered with platted nylon (red in colour) (second and third sections were joined with a stainless steel swivel)
- The fourth section consisted of 2 m of 2 mm diameter fluorocarbon monofilament cremona. (red in colour) (the third and fourth sections were joined with crimps)
- The hook was 14/0 stainless steel circle-hook crimped directly onto the line.

The bosun mentioned that they used circle hooks to mitigate against catching turtles.

Other Gear components were;

- ridged plastic buoys (photo P7)
- buoy line length measured was 20 m
- radio buoys (photo P8)

There were no tori lines or any other bird scaring devices onboard and no evident bycatch and depredation mitigation device/s used by the vessel.

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DATE **21 JULY 2022**

Steaming to fishing grounds, crew preparing bait and gear.

DATE **22 JULY 2022**

SET 1 – START SETTING

Time radio buoy set 14:15. GPS position 06° 35' 07"N / 077° 45' 23"E

Confirmed the VMS is on.

From the 1st radio buoy to first hard plastic buoy approximately 30 m line followed by first branch line.

Monitored the baiting and setting operation (the attachment of 3 radio buoys and 50 hard plastic buoys) for approximately one and half hours.

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Data recorded:

- vessel speed 9 knots (recorded from GPS) on a course of 180°;
- timer set for 8 seconds between branch line clip-on;
- 10 branch lines are clipped on between buoys;
- after setting every 25 buoys a radio buoy was set;
- no shark lines were recorded being attached to the buoys.
- the bait is hooked as described by the bosun

After monitoring setting operation at the stern, return to the bridge and confirm the speed of the vessel is 9 knots and the skipper advises he intends to keep the vessel speed steady throughout the setting period to avoid line entanglement and he wishes to have enough soak time on the line to have a chance of hauling fish early in the morning.

Stop monitoring at approximately 15:45 and go to sleep.

Return to bridge 23:30 (still 22/07/2022 in UTC)

Crew still sleeping and vessel drifting.

Request fishing logbook from the officer on watch (Mate) to collect end setting position and time;

SET 1 – END SETTING

- Confirm a total of 7 radio buoys were deployed
- End setting position: 6° 05' 21" N/ 077° 38' 50" E
- End setting date and time 22/07/2022 @ 17:35 (UTC)

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DATE 23 JULY 2022

SET 1 – START HAULING

Start hauling at 01:00 | Position: 06° 05' 33" N / 077° 38' 53" E

Notes:

- The vessel used an electric high voltage cable and ring that was clipped onto the line to slide down and stun the fish (Photo 9)
- Old bait and offal were thrown randomly into bins on the deck. These were periodically emptied over the stern.

SAMPLING STRATEGIES

1. line hauling observation periods
 - 50% of each branch line type exhaustively monitor for catch composition
 - batches of 50 hook sections monitored at a time.
 - hook sections to monitor selected randomly during the hauling period
2. Biometric sampling periods
 - Sample for biometrics a max of 50 individuals per caught species.
 - individuals selected randomly as they are caught.
3. Rest periods
 - meals and toilet breaks

Notes:

- Crew requested to put aside species of special interest while I'm observing the line.
- For species that had to be released alive the length were estimated against an object of a known length on the deck and for sharks the sex was recorded.
- There were no bite-offs.
- Left deck for a total of 2h15 min
- Specimens sampled biometrically were added to Form 4-LL Catch Composition Table, as instructed during training. Attention was paid to mention when the information was collected, if during biometrical sampling periods or line hauling sampling periods.

SET 1 - END HAULING

(08:15) 06° 35' 12"N / 077° 45' 28"E

NAVIGATION

Start navigating at 08:20, due SE at 10 knots, to reach new fishing spot

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SET 2- START LINE SETTING

First radio buoy deployed at 19:00 @ 05° 34' 48" N / 076° 59' 36" E (GPS).

Data recorded:

- vessel speed 9 knots (recorded from GPS) on a course of 180;
- timer set for 8 seconds between branch line clip-on;
- 10 branch lines are clipped on between buoys;
- after every 250 hooks and 25 buoys a radio buoy was set
- no shark lines were recorded being attached to the buoys.
- float line length remains the same as for the previous set

Notes:

- The first 50 branch lines have leaded weighted swivels and light sticks attached. The bait used on these lines was two squid to one mackerel.
- The branch lines following the first 50 were the longer lines with no weighted swivels. The bait used on these was one squid to one mackerel

After monitoring setting operation, return to the bridge and confirm the speed of the vessel is still 9 knots, and the VMS is still on.

Ask the skipper if they use shark lines, and he says they have never used them as his main target species is YFT and SWO. The only sharks they retain are the larger blue shark or mako sharks, if they get caught. As they don't use steel trace this is not a significant part of their by-catch.

SET 2- END LINE SETTING

- The last radio buoy was set at 22:15
- The position recorded from the GPS is: 04° 58' 54" N / 076° 46' 48" E
- Confirm with bosun a total 1500 hooks set (three tubs of 500 hooks each and 7 radio buoys were deployed

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DATE 24 JULY 2022

SET 2- START LINE HAULING

- Line hauling: 00:30
- Position recorded in the logbook was: $04^{\circ} 58' 42''$ N / $076^{\circ} 47' 21''$ E

SAMPLING STRATEGIES

Choose hook sections to sample for biometrics during line hauling, to take advantage of periods when there is fish to sample.

- 1200 hooks monitored for catch composition
- All biometric sampling took place outside of the catch monitoring periods. However, the crew were requested on occasions to put aside species of special interest to be sampled at a later time.

SET 2- END LINE HAULING

- The last radio buoy was brought onboard at 13:15.
- Position recorded from GPS: $05^{\circ} 27' 54''$ N / $077^{\circ} 01' 12''$ E

Notes:

- The line was broken in two places and hauling time was lost steaming to next radio buoy and working back on the line.
- Offal was managed in the same way as during the previous set.
- Same material used to stunt fish.
- No bite-offs
- Specimens sampled biometrically were added to Form 4-LL Catch Composition Table, as instructed during training. Attention was paid to mention when the information was collected, if during biometrical sampling periods or line hauling sampling periods.

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DATE 25 JULY 2022

Transiting south to new fishing area.

Crew working on repairing lines and branch lines.

SET 3- START LINE SETTING

First radio buoy deployed at 19:45

Position from the GPS: $02^{\circ} 29' 10''$ N / $078^{\circ} 39' 11''$ E

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Data recorded:

- Line setter was repaired and operational and set at 5 m/s
- Clip-on time remained 8 seconds
- Same bait and bait distribution as previous set
- 10 branch lines are clipped on between buoys;
- after every 250 hooks and 25 buoys a radio buoy was set
- no shark lines were recorded being attached to the buoys.
- VMS on and went to bed at 21:00.

DATE 26 JULY 2022

SET 3- END LINE SETTING

- End line setting: 23:05
- Position recorded in the logbook: 02° 52' 17" N / 079° 00' 21" E

SET 3- START LINE HAULING

- Line hauling: 07:30
- Position recorded in the logbook: 02° 50' 59" N / 079° 01' 01" E

SAMPLING STRATEGIES

Same as set 1.

Notes:

- The last radio buoy was brought onboard at 18:15.
- Position recorded from GPS: 02° 28' 22" N / 078° 42' 42" E
- Offal was managed in the same way as during the previous set.
- Same material used to stunt fish.
- No bite-offs
- Specimens sampled biometrically were added to Form 4-LL Catch Composition Table, as instructed during training. Attention was paid to mention when the information was collected, if during biometrical sampling periods or line hauling sampling periods.

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DATE 27 JULY 2022

A crew member seriously injured.

Skipper decided to return to port.

Started sailing at 19:00

DATE 28 JULY 2022

Arrived to Dikkowita port at 22:00.

Vessel to stay 1 week on port

DATE 29 JULY 2022

Disembark from the vessel at 03:00.

Set N°1: Catch composition (Sampling method for the estimation of catch SPS)

INDIVIDUALS CAUGHT DURING LINE HAULING OBSERVATION PERIODS

Spp.	Fate	Information on depredation, condition @ capture & release, SSIs gear interaction & handling and other comments
YFT	RET	
YFT	RET	
BSH	RET	Alive
BUM	RET	Dead at capture, hooked in the gills, gaffed and brought onboard (squid bait)
YFT	RET	
BSH	RET	Alive and injured
BUM	RET	Alive and injured, hooked in the gills, gaffed and brought onboard
YFT	RET	
YFT	RCC	Shark depredation, filleted for crew consumption, fillets weight, eye measured
YFT	RET	
YFT	RET	
BSH	RET	Dead
YFT	RET	
YFT	RET	
SKJ	RET	
YFT	RET	
KAW	RET	
OCS	DUD	Cut off with knife, hooked on jaw, swimming away with strength, in good health (fish bait).
BSH	RET	Alive healthy
YFT	RET	
YFT	RET	
MLS	RET	Dead at capture, hooked in the gills, gaffed and brought onboard (squid)
SFA	RET	Alive and injured, hooked in the gills, gaffed and brought onboard
YFT	RET	
YFT	DPO	Shark depredation, unfit for consumption, discarded. Whole weight estimated by the Observer.
YFT	RET	
SMA	RET	Alive and injured, hooked in the gills, gaffed and brought onboard (squid)

SMA	RET	Alive and injured, hooked in the gills, gaffed and brought onboard (squid)
YFT	RET	
YFT	RET	
SWO	RET	
RMB	DUD	Entangled in the line, pulled to the vessel with the gear, line cut with line cutter. Weight by eye.
BSH	RET	Alive healthy
BSH	RET	Alive healthy
BSH	RET	Alive healthy
TTL	DUD	Too big to bring onboard, entangled and weak, released alive, hook swallowed, line cut with knife, fate unknown. Weight observer eye estimation.
SWO	RET	
SWO	RET	
SWO	RCC	Shortfin Mako observed feeding on carcass. Filleted and ate by the crew. Weight eye estimate
SWO	RET	
SWO	RET	
DOL	RET	
SWO	RET	

Set 1: Biometrics

All lengths collected with a hard tape except for turtles collected with a flexible tape. Processed weights given by the crew processing the fish. Whole weights of discarded and released individuals estimated by eye by the observer.

INDIVIDUALS CAUGHT DURING BIOMETRIC SAMPLING PERIOD (sampling method for the collection of biometrics SRM)

Spp.	Fate	Reference Length (cm)	Sex	Weight (Kg)	Product	Comments
YFT	RET	127	U	23	Gilled and gutted	
YFT	RET	120	U	18	Gilled and gutted	
BSH	RET	207	M	18	Fins and trunk	Caught dead. Measured for TL
LKV	DUD	52	F	9	Whole	Drowned, with a hook in the mouth, line cut with line cutters, brought on board with a scoop net, revival attempted with no success. Bait squid no light stick
YFT	RET	158	U	48	Gilled and gutted	
BSH	RET	177	F	14	Fins and trunk	Caught dead
YFT	RET	137	U	29	Gilled and gutted	
SFA	RET	147	U	9	Headed, gutted & tailed	Dead at capture, retained, hooked in the gills. Bait fish, branchline with no light stick
SMA	RET	188	M	35	Fins and trunk	Dead at capture, retained
DOL	RET	103	U	6	Whole	
YFT	RET	116	U	21	Gilled and gutted	
YFT	RET	115	U	18	Gilled and gutted	
YFT	RET	126	U	24	Gilled and gutted	
DOL	RET	97	F	5	Whole	
SWO	RET	204	U	130	Headed, gutted & tailed	
SWO	RET	187	U	36	Headed, gutted & tailed	
YFT	RET	112	U	17	Gilled and gutted	
YFT	RET	101	U	15	Gilled and gutted	
BSH	RET	204	M	17	Fins and trunk	Caught alive and in good health. TL

SSI SPECIMENS CAUGHT DURING LINE HAULING OBSERVATION PERIOD AND PLACED ASIDE BY THE CREW FOR BIOMETRIC SAMPLING BY THE OBSERVER (Processed weights provided by the crew, whole weights eye measurement)

Spp.	Fate	Reference Length (cm)	Sex	Weight (Kg)	Product	Comments
BUM	RET	265	F	65	Headed, gutted & tailed	Caught during line hauling observation period and place aside by the crew for the observer to measure, except turtle that was not brought on-bord and weight was estimated (EM)
BUM	RET	294	F	130	Headed, gutted & tailed	
MLS	RET	247	F	35	Headed, gutted & tailed	
SFA	RET	287	F	65	Headed, gutted & tailed	
TTL	DUD	UNK	U	80	Whole	

Set N°2: Catch composition (Sampling Method for the estimation of catch MRS)

Spp.	Fate	Information on depredation, condition @ capture & release, SSIs gear interaction & handling and other comments
YFT	Retained	
SWO	Retained	
YFT	Retained	
YFT	Retained	
BSH	Retained	Dead
YFT	Retained	
YFT	Retained	
YFT	Retained	
BSH	Retained	Alive injured, hook in the gill slits
YFT	Retained	
SKJ	Retained	
KAW	Retained	
OCS	Discarded IOTC retention ban	Hook in the jaw, pulled to the side of the vessel using the gear, bit line off, swimming away powerfully, caught on a configuration 2 branchline.
YFT	Retained	
YFT	Retained	
BSH	Retained	Alive active
DOL	Retained	
SWO	Retained	
SMA	Retained	Alive active
YFT	Retained	
LKV	Discarded IOTC retention ban	hook swallowed, dead when hauled using scoop net, around 18kg, put aside for measuring
SWO	Retained	
YFT	Retained	
SWO	Retained	
SWO	Retained	
SMA	Retained	Alive active
RMB	Discarded IOTC retention ban	Giant Manta caught alive and stressed, released alive stressed, entangled in the line, hooked on wing, disentangled with gaff pole and hooked removed
SMA	Retained	Alive active
YFT	Retained	
SKJ	Retained	
SKJ	Retained	
BSH	Retained	Alive active
YFT	Retained	
YFT	Retained	

Set N°2: Catch composition (continued)

Spp.	Fate	Information on depredation, condition @ capture & release, SSIs gear interaction & handling and other comments
YFT	Retained	
GBA	Retained	
YFT	Retained	
BUM	Retained	Caught stressed but alive, hooked in the rostrum, brought on board with the gaff
YFT	Retained	
DOL	Retained	
SWO	Retained	
BUM	Retained	Caught stressed but alive, hooked in the mouth, brought on board with the gaff
BSH	Retained	Alive active
SWO	Retained	
YFT	Retained	
YFT	Retained	
YFT	Retained	
DOL	Retained	

Set 2: Biometrics

All lengths collected with a hard tape except for turtles collected with a flexible tape. All processed weights provided by the crew processing the fish. All whole weights estimated by the observer.

Specimens caught during biometric sampling period (sampling method for the collection of biometrics SRM)

Spp.	Fate	Reference Length (cm)	Sex	Weight (Kg)	Product	Comments
YFT	RET	127	U	23	Dressed	
YFT	RET	120	U	18	Dressed	
BSH	RET	207 (TL)	M	18	Fins and trunk	Caught dead
LKV	DUD	52	F	9	Whole	Drowned, with a hook in the mouth, line cut with line cutters, brought on board with a scoop net, revival attempted with no success.
YFT	RET	158	U	48	Dressed	
BSH	RET	177	F	14	Fins and trunk	Caught dead
YFT	RET	137	U	29	Dressed	
SFA	RET	147	U	9	Headed, gutted and tailed	Dead at capture, retained
SMA	RET	188 (TL)	M	35	Fins and trunk	Dead at capture, retained
DOL	RET	103	M	6	Whole	
YFT	RET	116	U	21	Dressed	
YFT	RET	115	U	18	Dressed	
YFT	RET	126	U	24	Dressed	

Specimens caught during line hauling observation period and placed aside by the crew

Spp.	Fate	Reference Length (cm)	Sex	Weight (Kg)	Product	Comments
BUM	RET	265	F	65	Headed, gutted and tailed	Caught during line hauling observation period and place aside by the crew for the observer to measure
BUM	RET	294	F	130	Headed, gutted and tailed	
MLS	RET	247	F	35	Headed, gutted and tailed	
SFA	RET	287	F	65	Headed, gutted and tailed	
LKV	DUD	50	U	18	Round	

Weights from vessel logbook except ETPs

Set N°3: Catch composition

Sampling method for the collection of catch composition SPS

Spp.	Fate	Wt. (Kg)	Information on depredation, condition @ capture & release, SSIs gear interaction & handling and other comments
YFT	RET	24	
YFT	RET	21	
YFT	RET	18	
YFT	RET	25	
SWO	RET	47	
YFT	RET	25	
DOL	RET	5	
YFT	RET	26	
YFT	RET	28	
BSH	RET	18	A3
SKJ	RET	1	
YFT	RET	32	
YFT		25	Depredation, x2 cookie cutter shark bites on fish, fish filleted and retained for crew consumption
YFT	RET	25	
SWO	RET	110	
YFT	RET	50	
SMA			Lost, bit line off as fish brought close vessel, cannot see where hooked, condition alive, possibly distressed
YFT	RET	30	
YFT	RET	25	
BSH	RET	20	A1
YFT	RET	25	
YFT	RET	27	
YFT	RET	30	
MLS		25	Released SSI, fighting strong, swallowed hook, cut loose with a knife and swimming away in good condition. Possibly distressed due to interaction.
YFT	RET	35	
KAW	RET	3	
BSH	RET	45	A1
DKK		100	Leatherback turtle, cannot bring onboard, hooked in mouth and line entangled around flipper, leader cut with knife mounted on long pole, hook still in turtle, caught and released in good condition, distressed
YFT	RET	40	
YFT	RET	40	
YFT	RET	42	
SWO			Depredation by killer whales observed when the fish was brought onboard, large chunks of fish eaten, unusable and discarded, large fish possibly 150 kgs whole weight
YFT	RET	40	

Set N°3: Catch composition (continued)

Sampling method for the collection of catch composition SPS

Spp.	Fate	Wt. (Kg)	Information on depredation, condition @ capture & release, SSIs gear interaction & handling and other comments
SMA	RET	80	A2
BSH		50	Lost, bit line off, hooked in jaw, shark looked tired when caught, released alive in same condition
YFT		32	Cookie cutter shark depredation, fish filleted for crew
YFT	RET	34	
YFT	RET	35	
YFT	RET	23	
BSH	RET	65	
SKJ	RET	2	
LKV		10	Juvenile olive ridley turtle, entangled around flipper and neck, brought onboard to detangle. Not hooked. Weak when brought onboard, but in good health (distressed) when released. Brought on board using a scoop net.
DOL	RET	4	
YFT	RET	20	
SWO	RET	95	
SWO	RET	90	
SMA	RET	65	A1
YFT	RET	34	
YFT	RET	38	
YFT	RET	31	

Weight information collected from vessel logbook

Set 3: Biometrics

All lengths collected with a hard tape except for turtles collected with a flexible tape.

Caught during biometric sampling period (sampling method SRM)

Weights from vessel logbook except ETPs

Spp.	Fate	Reference Length (cm)	Sex	Weight (Kg)	Product	Comments
SWO	RET	284	U	89	HG	
YFT	RET	128	U	25	DR	
YFT	RET	141	U	34	DR	
YFT	RET	140	U	33	DR	
DOL	RET	110	U	6	RD	
YFT	RET	118	U	20	DR	
LKV	DUD	46	F	9	RD	Olive ridley sea turtle, dead when hauled by pulling on the line, drowned, hooked in Beak, eye measured
SMA	RET	221	M	37	FT	A2
YFT	RET	153	U	47	DR	
YFT	RET	125	U	23	DR	
YFT	RET	123	U	21	DR	
YFT	RET	131	U	30	DR	
SWO	RET	231	U	94	HG	
BSH	RET	234	F	27	FT	A1
SWO	RET	230		90	HG	Depredated, cookie cutter shark, retained
YFT	RET	151	U	45	DR	
SWO	RET	219	U	85	HG	
YFT	RET	148	U	41	DR	
YFT	RET	138	U	34	DR	
YFT	RET	136	U	31	DR	

Add specimens sampled biometrically to catch composition table. Don't forget to mention information was collected during BS and sampling method for the collection of catch composition will be EXP, since didn't sampled fish that came onboard during breaks.

Caught during line hauling observation periods (sampling method for the collection of biometrics EXS)

Spp.	Fate	Reference Length (cm)	Sex	Weight (Kg)	Product	Comments
MLS	RET	230	M	25	HG	Caught during line hauling observation period and place aside by the crew for the observer to measure
LKV	DUD	48	F	10	RD	

Weights from vessel logbook except ETPs

PHOTO LOG

<p>P1 Life raft not in date</p>	
<p>P2 New Life raft</p>	
<p>P3 Lines setter</p>	
<p>P4 Line hauler</p>	
<p>P5 Mainline on drum</p>	
<p>P6 Branch line bins</p>	

P7 Hard plastic buoys



P8 Radio buoys



P9
Eclectic shocking device

