IOTC-2021-SC24-NR06_Annex4

Italy National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2021

Ministry of Agriculture and Fisheries (MIPAAF)

INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

In accordance with IOTC Resolution 15/02, final scientific data for the previous year was provided to the IOTC Secretariat by 30 June of the current year, **for all fleets other than longline** [e.g. for a National Report submitted to the IOTC Secretariat in 2021, final data for the 2020 calendar year must be provided to the Secretariat by 30 June 2021)	YES or NO [delete one] DD/MM/YYYY [Add submission date here]
In accordance with IOTC Resolution 15/02, provisional **longline data** for the previous year was provided to the IOTC Secretariat by 30 June of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2021, preliminary data for the 2020 calendar year was provided to the IOTC Secretariat by 30 June 2021). **REMINDER:** Final longline data for the previous year is due to the IOTC Secretariat by 30 Dec of the current year [e.g. for a National Report submitted to the IOTC Secretariat in 2021, final data for the 2020 calendar year must be provided to the Secretariat by 30 December 2021).	YES or NO [delete one] DD/MM/YYYY [Add submission date here]
If no, please indicate the reason(s) and intended actions:	

Executive Summary [Mandatory]

*[Include a summary of the key aspects of the National Report for the most recent reporting year. This summary will be included in the Scientific Committee report (**300 words maximum**)]*

The report regards the fishing activities of "Torre Italia", the single vessel belonging to the Italian fishing fleet which operates in the IOTC area, during the 2020 campaign. Data comes either from the reports issued by onboard scientific observers or by analysing the video footages recorded during a fishing trip, in the framework of a scientific programme developed by ORTHONGEL and under the technical responsibility of the BUREAU VERITAS LIVING RESOURCES based in Rennes – France

Contents [*add a table of contents with page numbers*] **[Desirable]**

1. BACKGROUND/GENERAL FISHERY INFORMATION [MANDATORY]

[add a general description of national fleets including national fisheries, methods and fishing area for the previous year]

The Italian fleet operating in the Indian Ocean is made of a single boat, the "Torre Italia" previously named "Torre Giulia" until September 2019. The vessel operated using purse seine gear in the IOTC area of competence either in International waters and in EEZs, mainly Seychelles and Mauritius.

2. FLEET STRUCTURE [MANDATORY]

[Add a description of the national fleet structure, by gear type, including vessel size and duration of fishing operations.]

"Torre Italia" has got a length of 81,90 meters and a width of 13,70 meters. The capacity of the hold is 1790 m 3 and the boat is able to freeze about 1220 tons of fish. The boat was built in 1997 at the PIRIOU shipyard. There are about 30 crew members from different nationalities. Detailed features: Construction year: 1997 Length overall: 81,90 mt. Length between perpendiculars: 70 m. Width: 13,70 m Draft: 6,60 metres. Number of fish holds: 17 (16 deck offsets + one big (1-2 on bow). Storage capacity: 1794 m 3 (1280 t). Capacity of fuel tanks: 620 m 3 . Main engine power: 3690 KW. Peak speed: 14 knots. Cruising speed: 12 knots. The fishing trip lasts several days (up to two months).

Table 1: Number of vessels operating in the IOTC area of competence, by gear type and size *[minimum – most recent five years: 2016–2020; Desirable for as long a period as possible]*

	2016	*2017*	*2018*	*2019*	*2020*
PS > 25mt	*1*	*1*	*1*	*1*	*1*

3. CATCH AND EFFORT (BY SPECIES AND GEAR) [Mandatory]

[Add a general description of fishing activities by national fleets (by gear type) in the IOTC area of competence, including changes in fishing patterns, fleet operations and target species.]

The Italian fishing fleet operating in the Indian Ocean refers only to the "Terra Giulia" vessel. In 2019 it changed the name in "Torre Italia". The fishing area of competence is located between northern Madagascar, the Seychelles and the Eastern coasts of the African continent. The fishing operations are wholly conducted with "*purse seine*" gear and the species mainly caught are *Thunnus albacares* (YFT) and *Katsuwonus pelamis* (SKJ), representing around 80% of the total catch from 2016. The main catches are obtained using FADs, with around 70% of the total.

Table 2. Annual catch and effort by gear and primary species in the IOTC area of competence. *[for the most recent five years at a minimum]* Include a 'not elsewhere indicated – NEI' category for all other catches combined. [Note: Multiple tables may be required e.g. **Table 2a, 2b, 2c). [Mandatory]**

Tab. 2a, Annual catch by gear, primary species and type of fish distribution (2016-2020), in tons

Year	Gear	Primary Species														
		YFT			SKJ			BET			ALB			Others		
		Free school	*FADs*	*Whale sharks*	*Free school*	*FADs*	*Whale sharks*	*Free school*	*FADs*	*Whale sharks*	*Free school*	*FADs*	*Whale sharks*	*Free school*	*FADs*	*Whale sharks*
2016	Purse seine	925	547	0	378	1014	10	18	46	0	1	2	0	0	0	0
2017	Purse seine	940	2038	0	0	2052	0	44	87	0	1	1	0	0	1	0
2018	Purse seine	382	2299	0	43	4581	0	10	688	0	0	2	0	0	136	0
2019	Purse seine	1333	1091	0	566	2104	0	103	395	0	36	1	0	0	5	0
2020	Purse seine	734	461	0	759	1134	0	79	105	0	5	0	0	10	2983	0

Tab 2a.1, Annual catch by gear and primary species (2016-2020), in tons

Primary species	Gear	Year				
		2016	*2017*	*2018*	*2019*	*2020*
YFT	Purse seine	1472	2978	2681	2424	1195
SKJ	Purse seine	1402	2052	4624	2670	1893
BET	Purse seine	64	131	698	498	184
ALB	Purse seine	3	2	2	37	5
Others	Purse seine	0	1	136	5	2993

Tab 2a.2, Annual catch by gear and type of fish distribution (2016-2020), in tons

Haul	Gear	Year				
		2016	*2017*	*2018*	*2019*	*2020*
Free school	Purse seine	1322	985	435	2036	1575
FADs	Purse seine	1609	4179	7706	3596	4683
Whale sharks	Purse seine	10	397	1062	10	19

Tab. 2b, Annual effort by gear and primary species (2016-2020), in days at sea

Year	Gear	Fishing effort (days at sea)
2016	Purse seine	133
2017	Purse seine	146
2018	Purse seine	361
2019	Purse seine	224
2020	Purse seine	298

Figure 1. Historical annual catch for the national fleet, by gear and primary species, for the IOTC area of competence for the entire history of the fishery/fleet. **[Mandatory]**
All the catches were made using purse seine gear

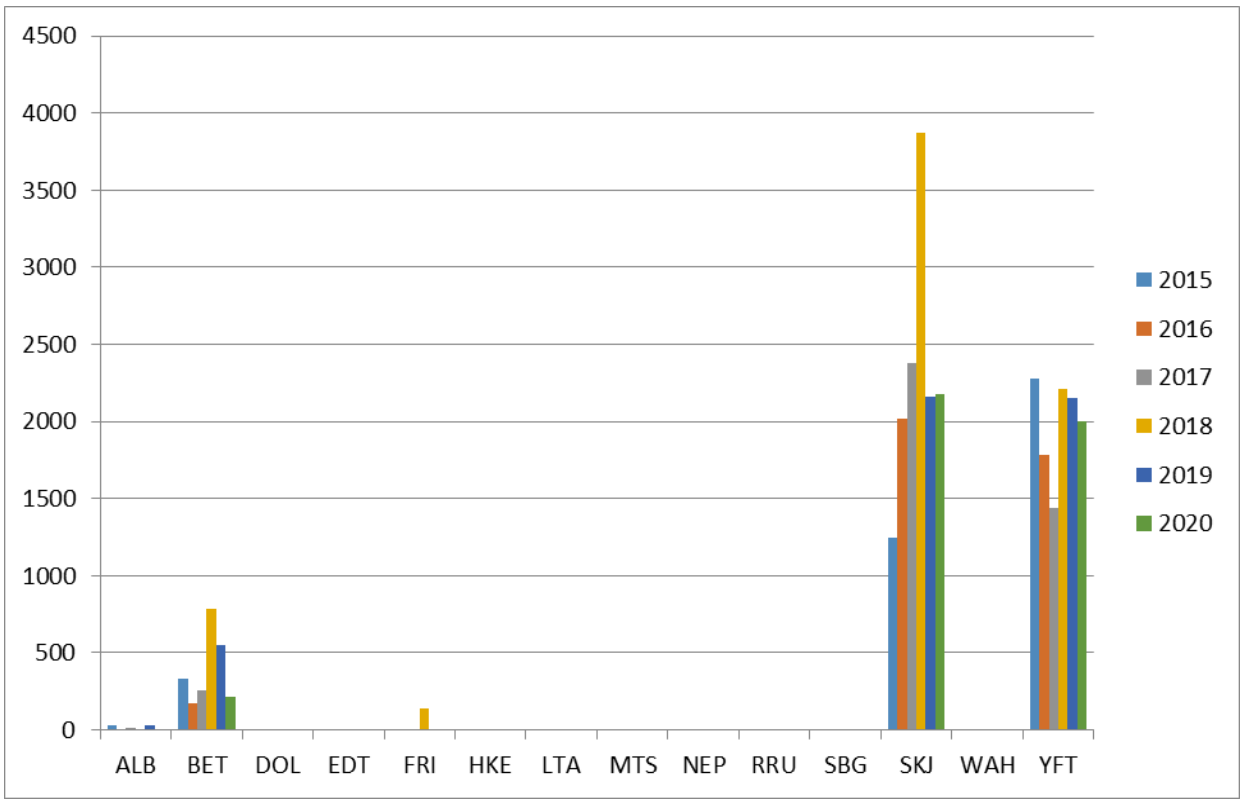
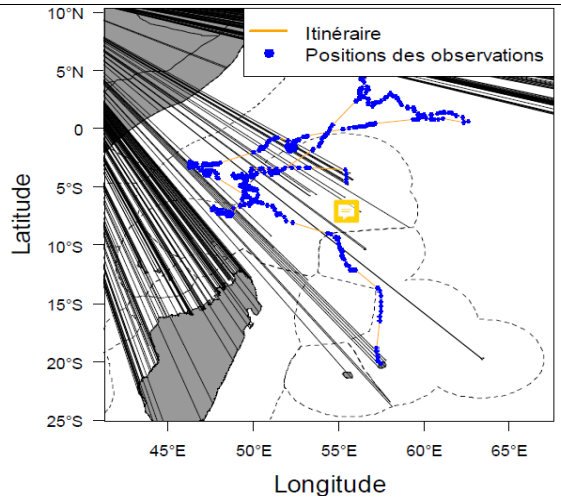


Figure 2a. Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence (**2020*, VIII Fishing trips from 12 December 2019 to 2 January 2021***). **[Mandatory]**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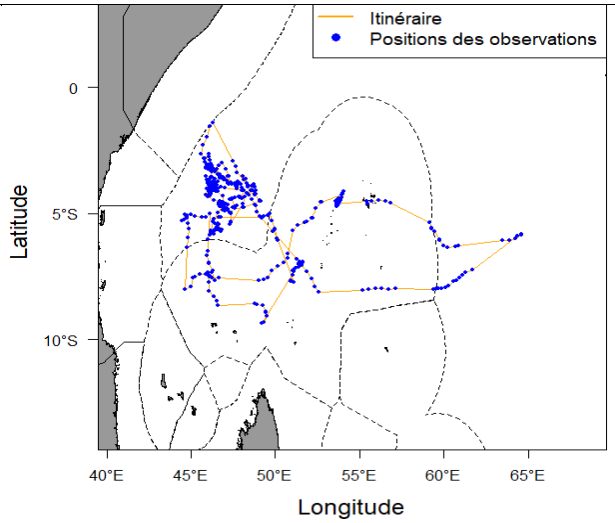
55°E
60°E
65°E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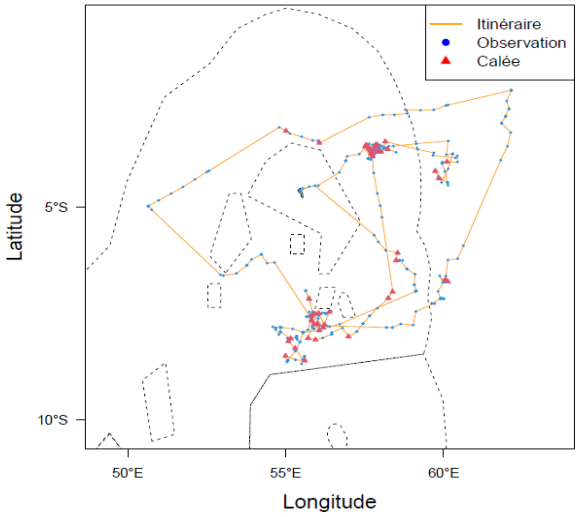
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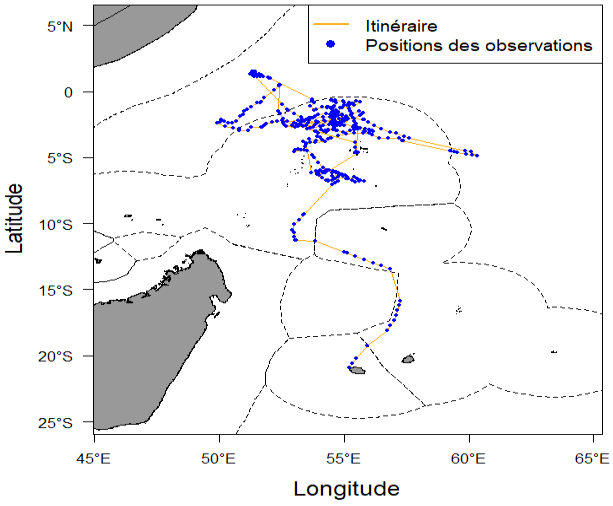
60°E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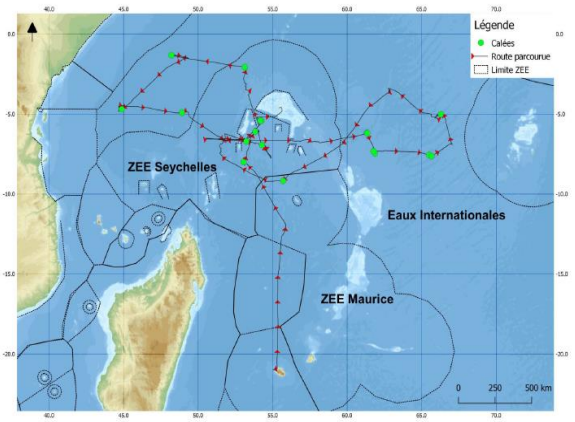
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Calées
Route parcourue
Limite ZEE
ZEE Seychelles
Eaux Internationales
ZEE Maurice
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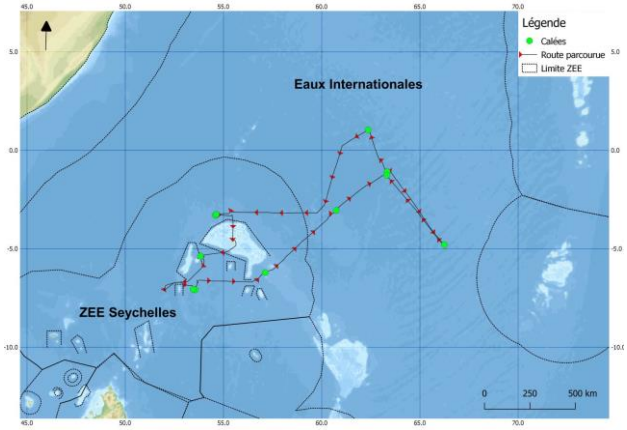
250
500 km


Légende
Calées
Route parcourue
Limite ZEE
Eaux Internationales
ZEE Seychelles
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250
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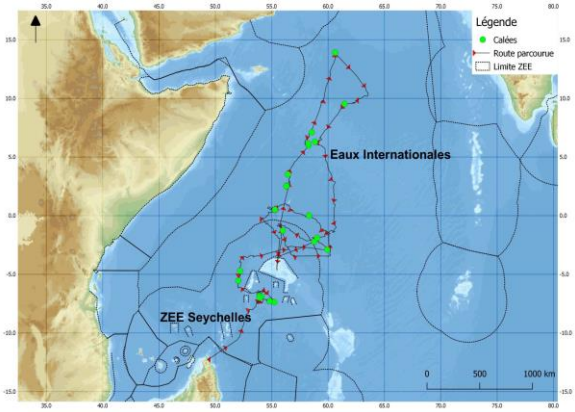
Légende
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Route parcourue
Limite ZEE
Eaux Internationales
ZEE Seychelles
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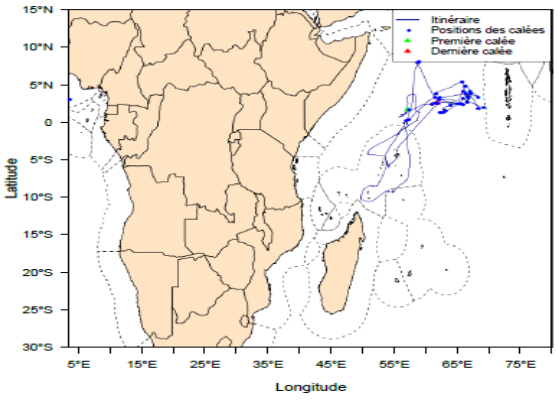
500
1000 km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Positions des calées
Première calée
Dernière calée
Latitude
Longitude
15°N
10°N
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10°S
15°S
20°S
25°S
30°S
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15°E
25°E
35°E
45°E
55°E
65°E
75°E

From July to December 2020, the distribution of the fishing effort is not available through maps, since data have been recorded through CCTV system onboard the vessel.

Figure 2b. Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence ***(*2016, V fishing trips*: from 17 December 2015 to 31 October 2016)***

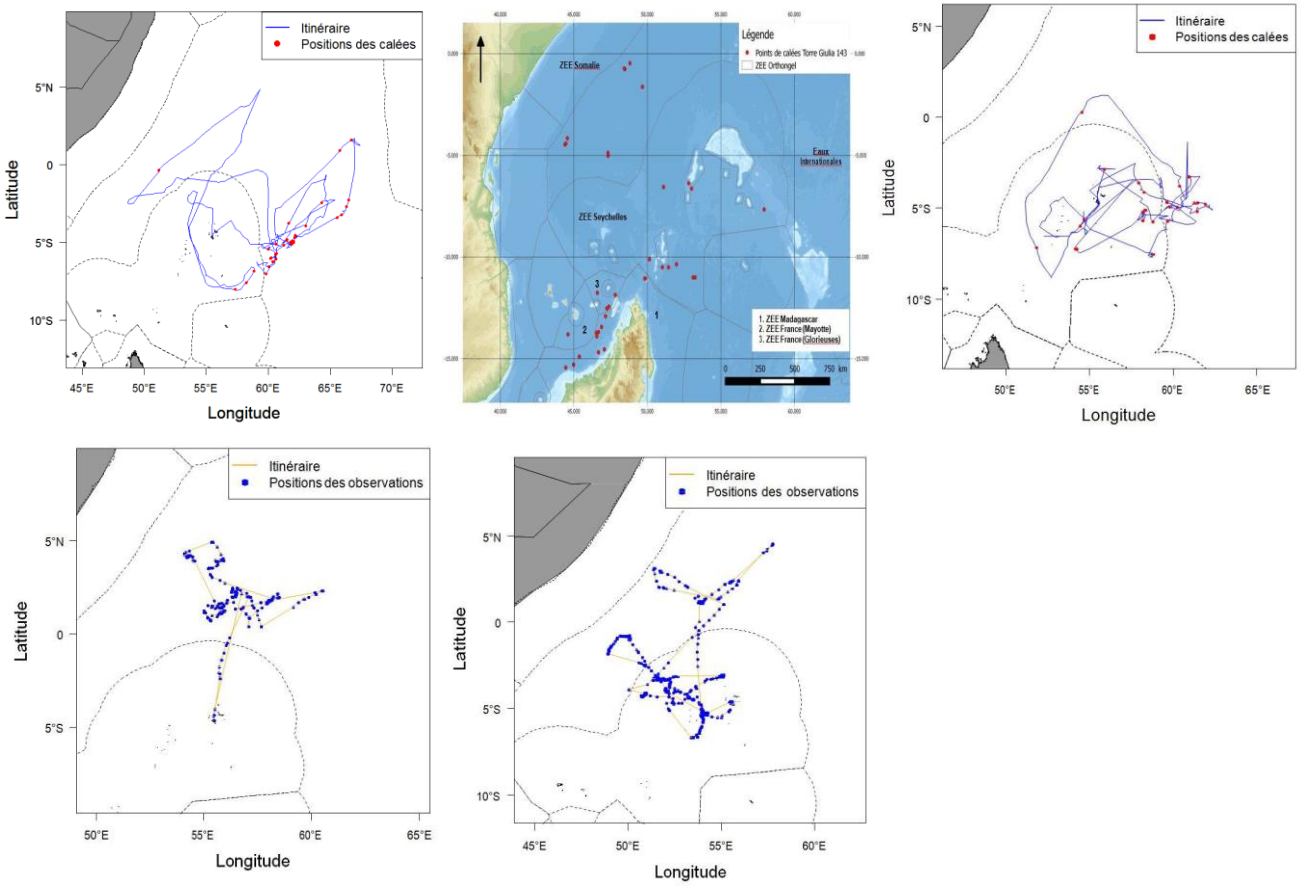


Figure 2b.1 Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence ***(*2017, IX fishing trips: *from 30 December 2016 to 11 January 2018)***

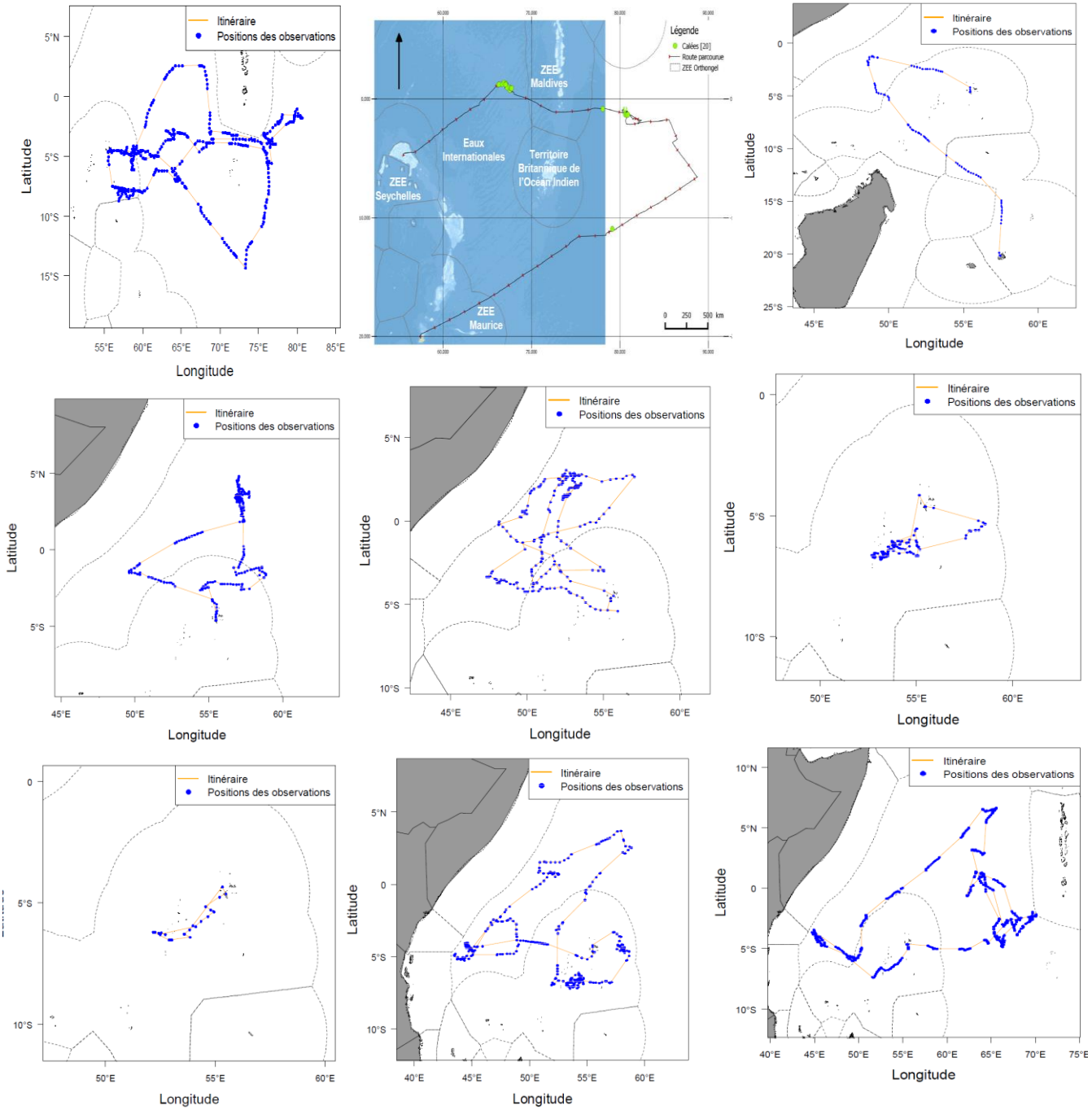
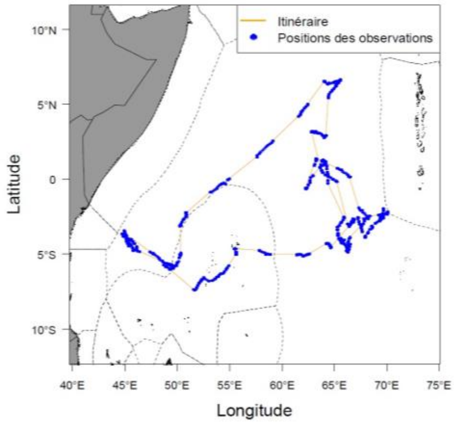


Figure 2b.2 Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence ***(*2018, XI fishing trips*: from 30 November 2017 to 21 December 2018)***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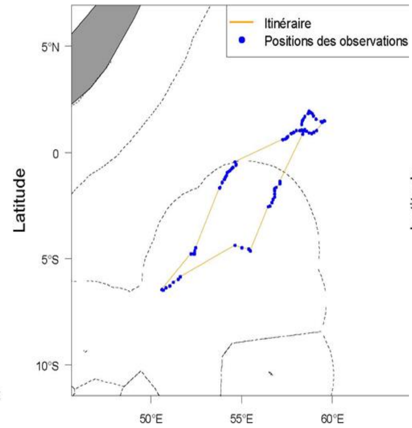
Longitude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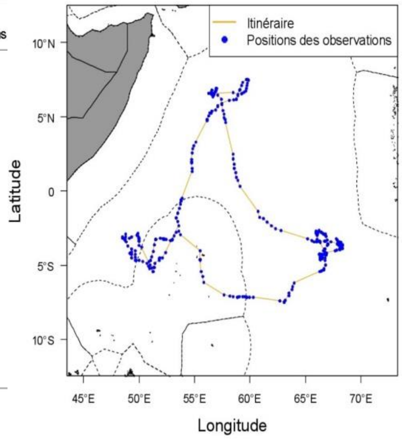
Positions des observations
Latitude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Positions des observations
Latitude
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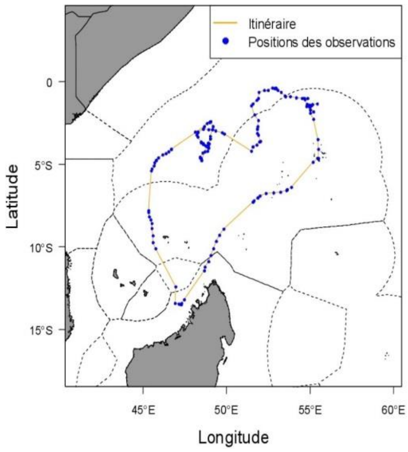
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Positions des observations
Latitude
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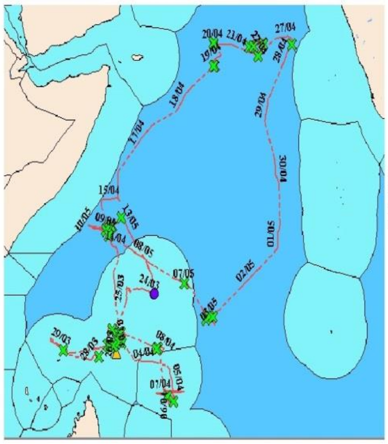

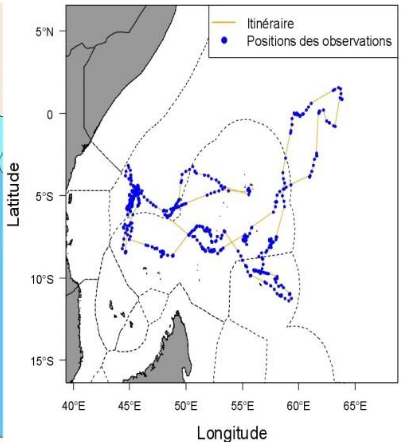
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Positions des observations
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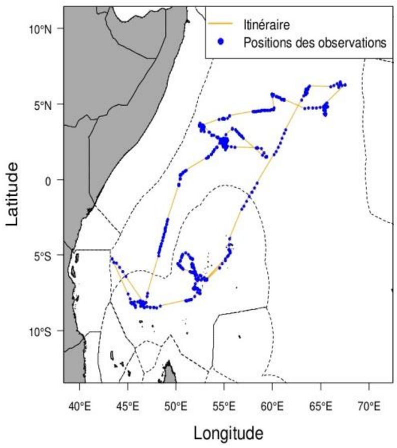
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Positions des observations
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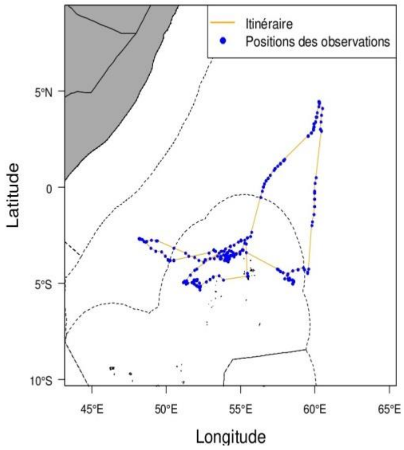
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Positions des observations
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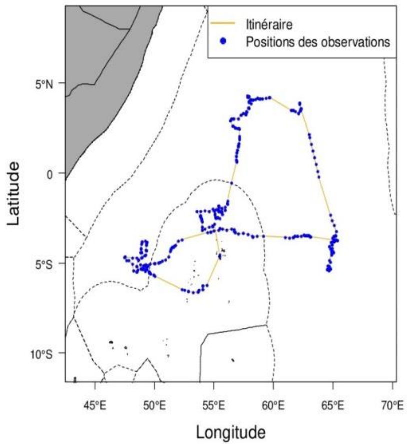
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Positions des observations
Latitude
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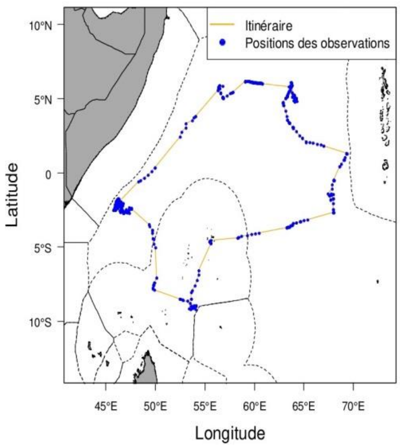
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Positions des observations
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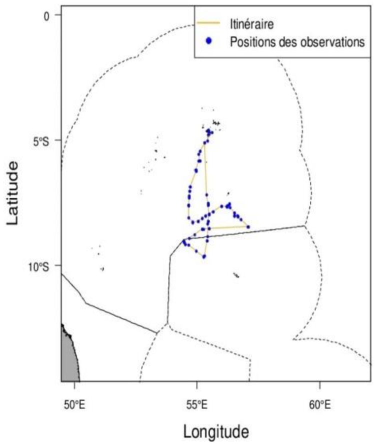

Itinéraire
Positions des observations
Latitude
Longitude

Figure 2b.3 Map of the distribution of fishing effort, by gear type for the national fleet in the IOTC area of competence ***(*2019, VIII fishing trips*: from 31 December 2018 to 2 August 2019)***

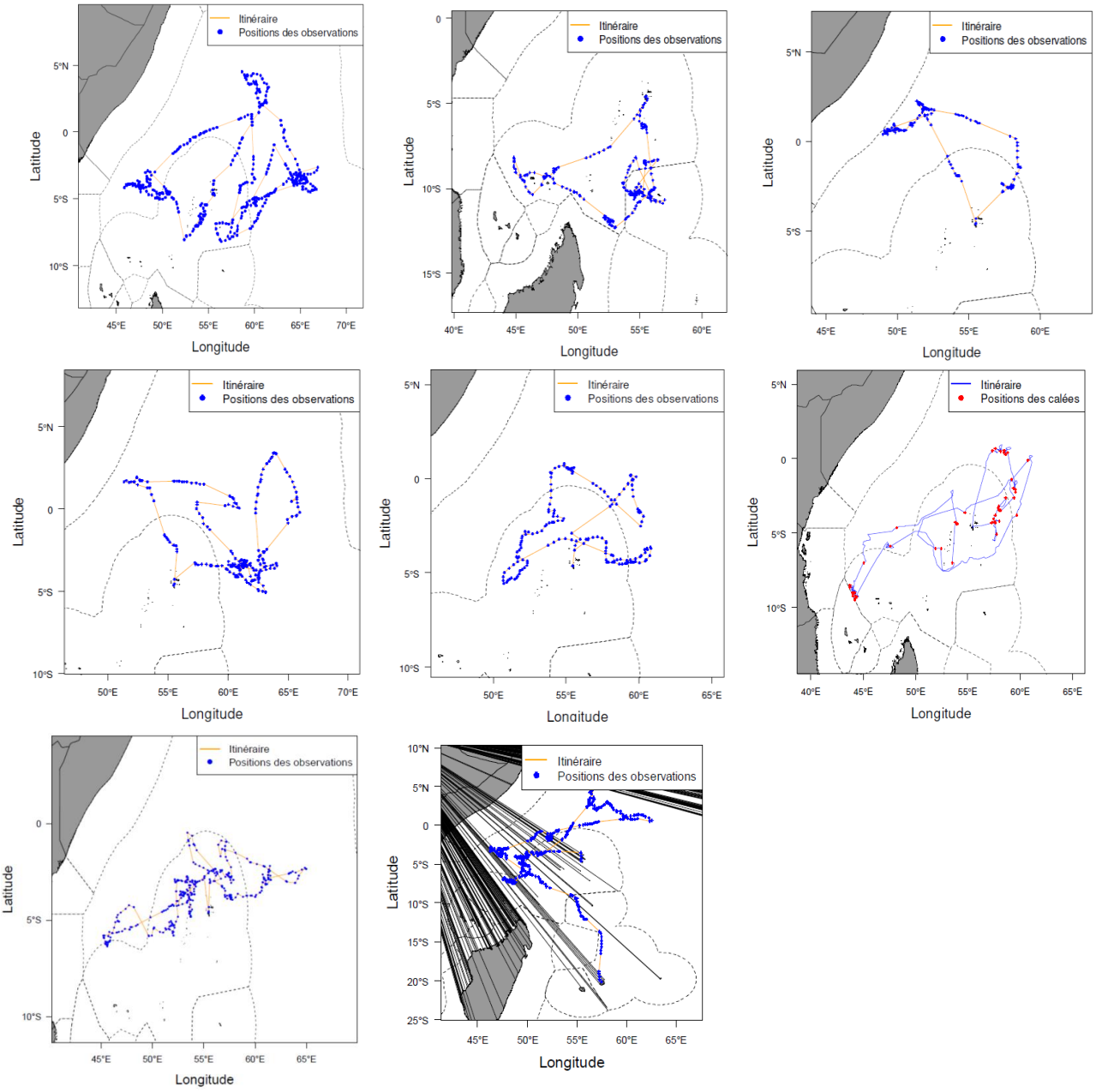
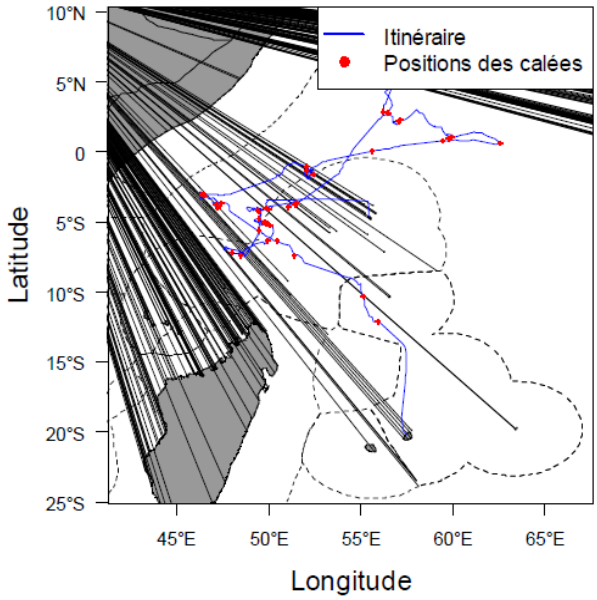
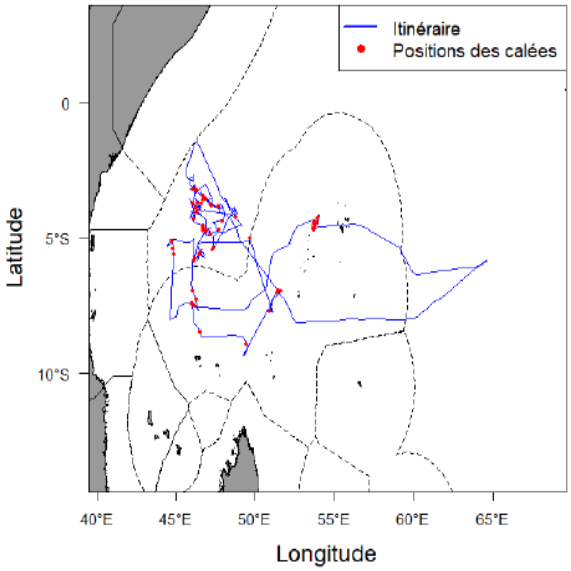
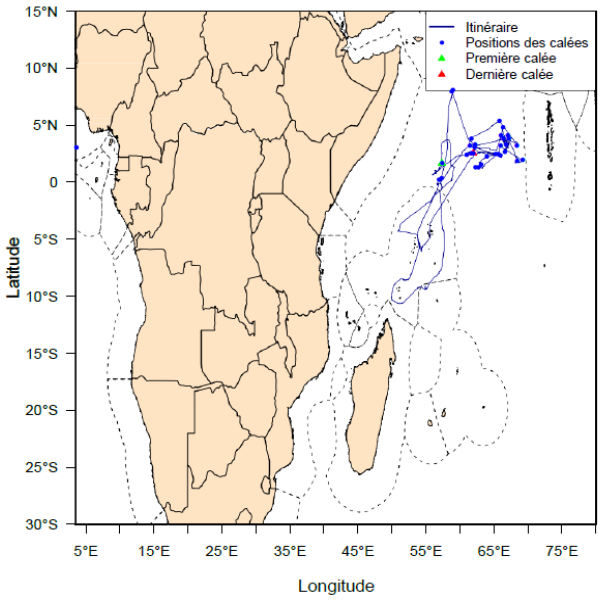
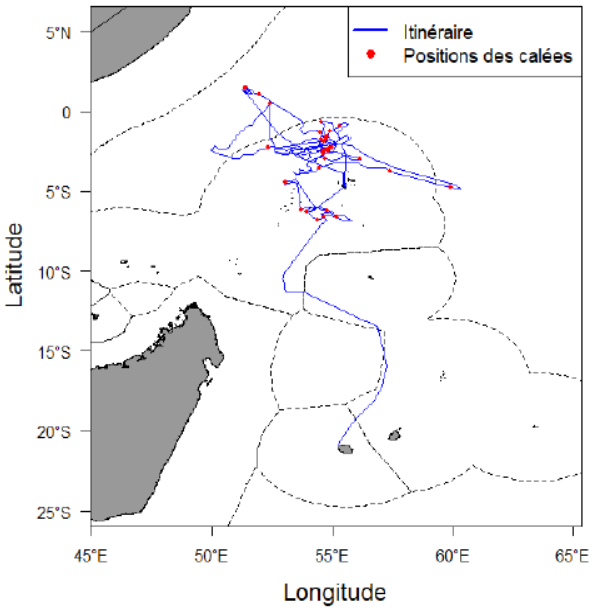


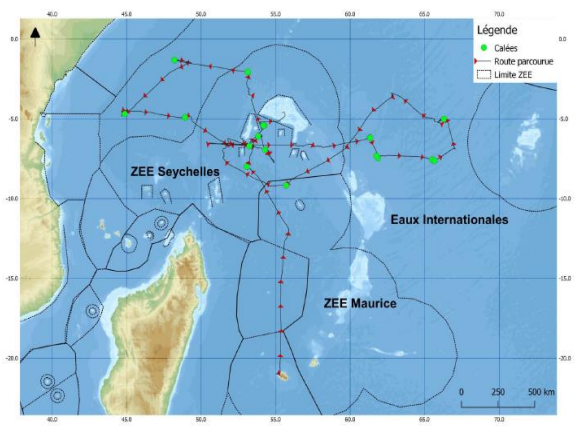
Figure 3a. Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (**2020**). **[Mandatory]**

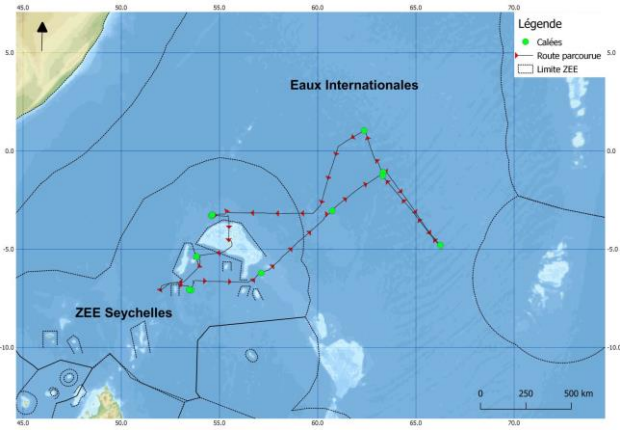


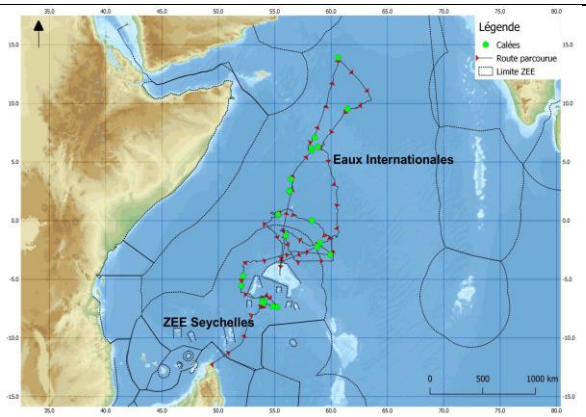











Légende
Calées
Route parcourue
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Eaux Internationales
ZEE Seychelles
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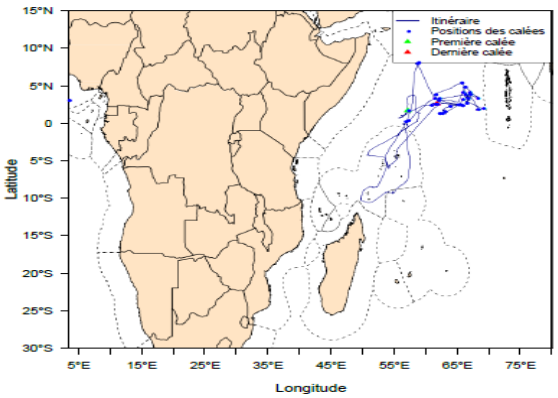
500
1000 km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30°S
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25°E
35°E
45°E
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65°E
75°E
Longitude

Figure 3b Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (**2016 [Mandatory]**

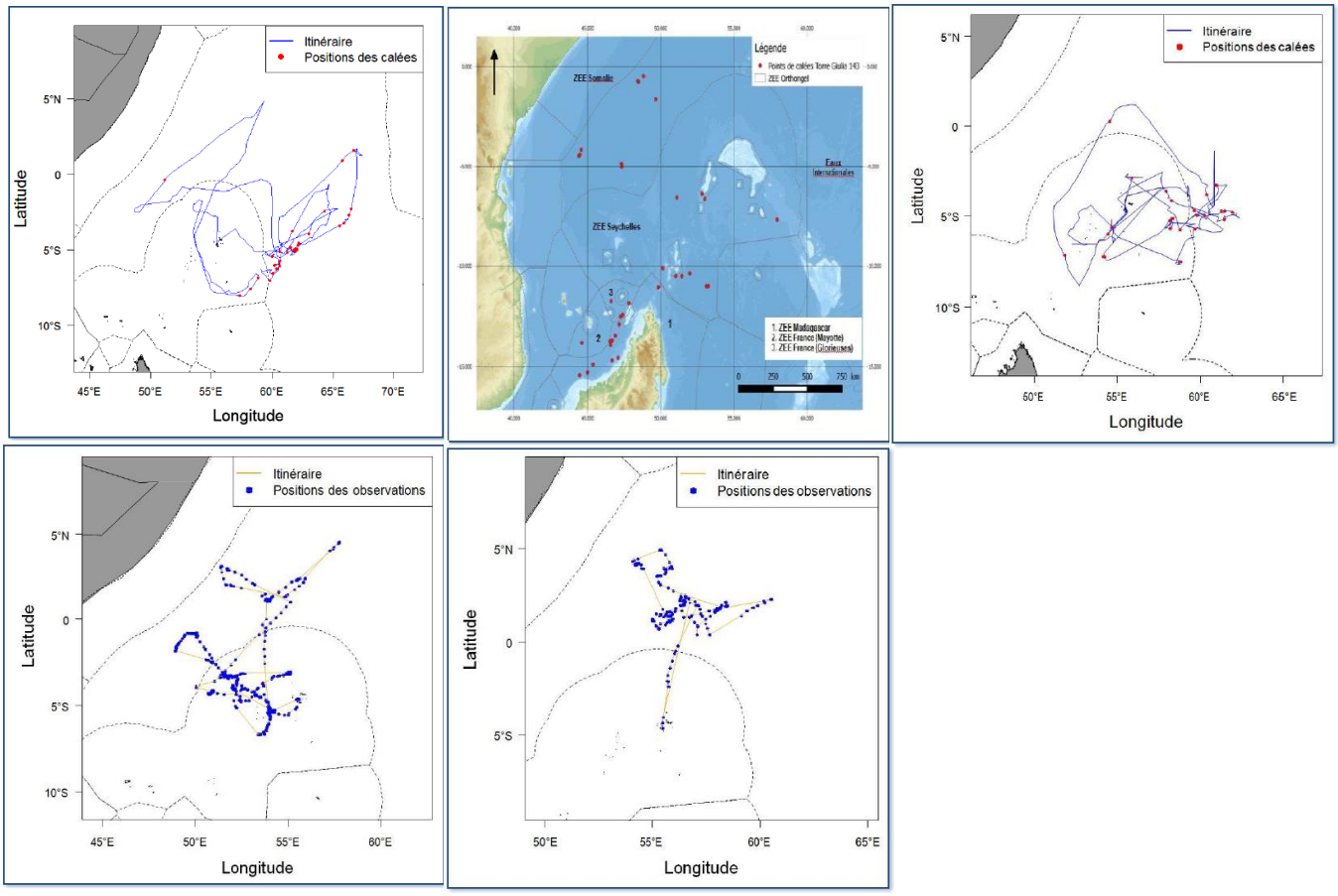


Figure 3b.1 Map of distribution of fishing <u>catch</u>, by species for the national fleet, in the IOTC area of competence (**2017) [Mandatory]**

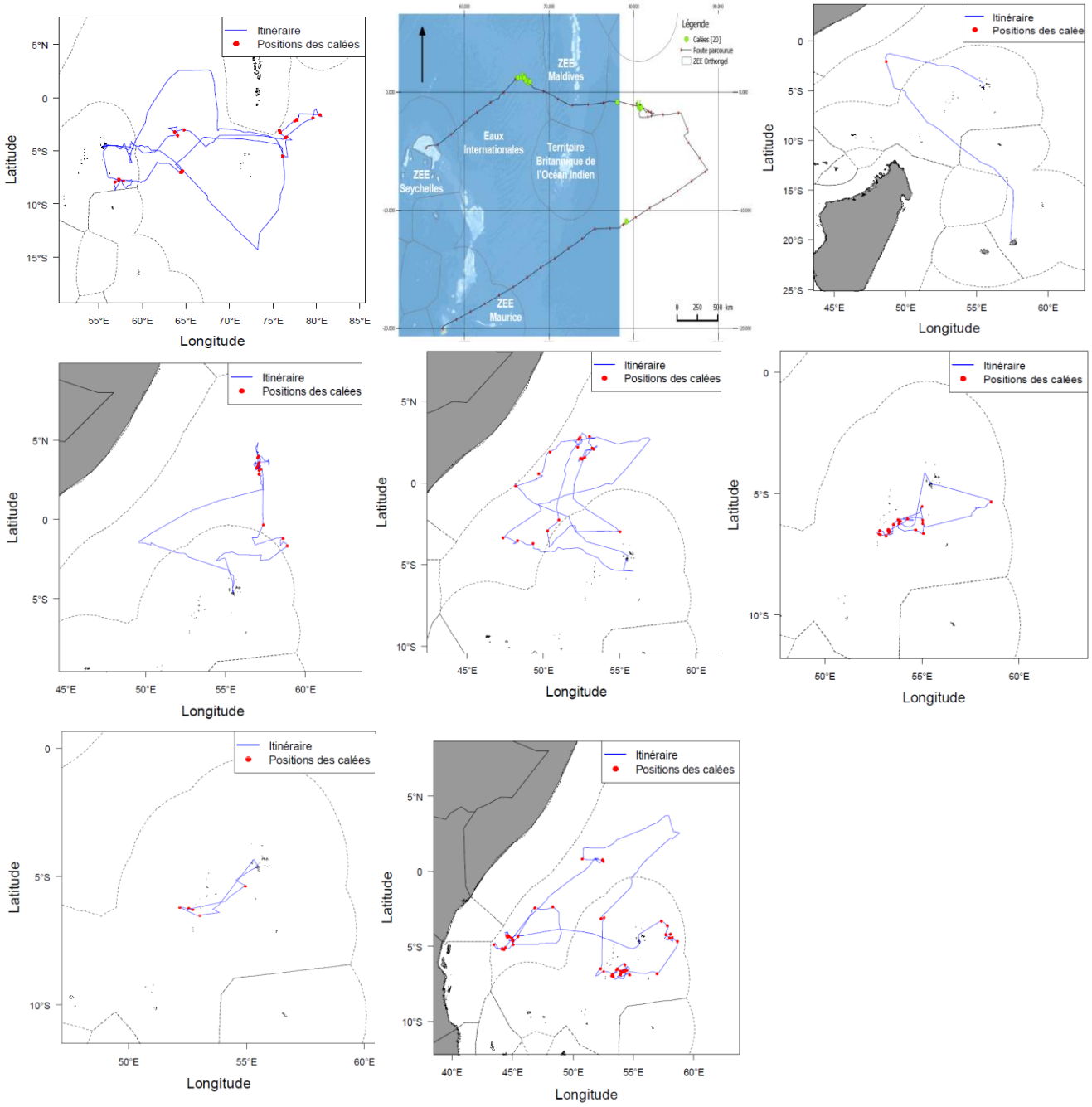


Figure 3b.2 Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (**2018) [Mandatory**

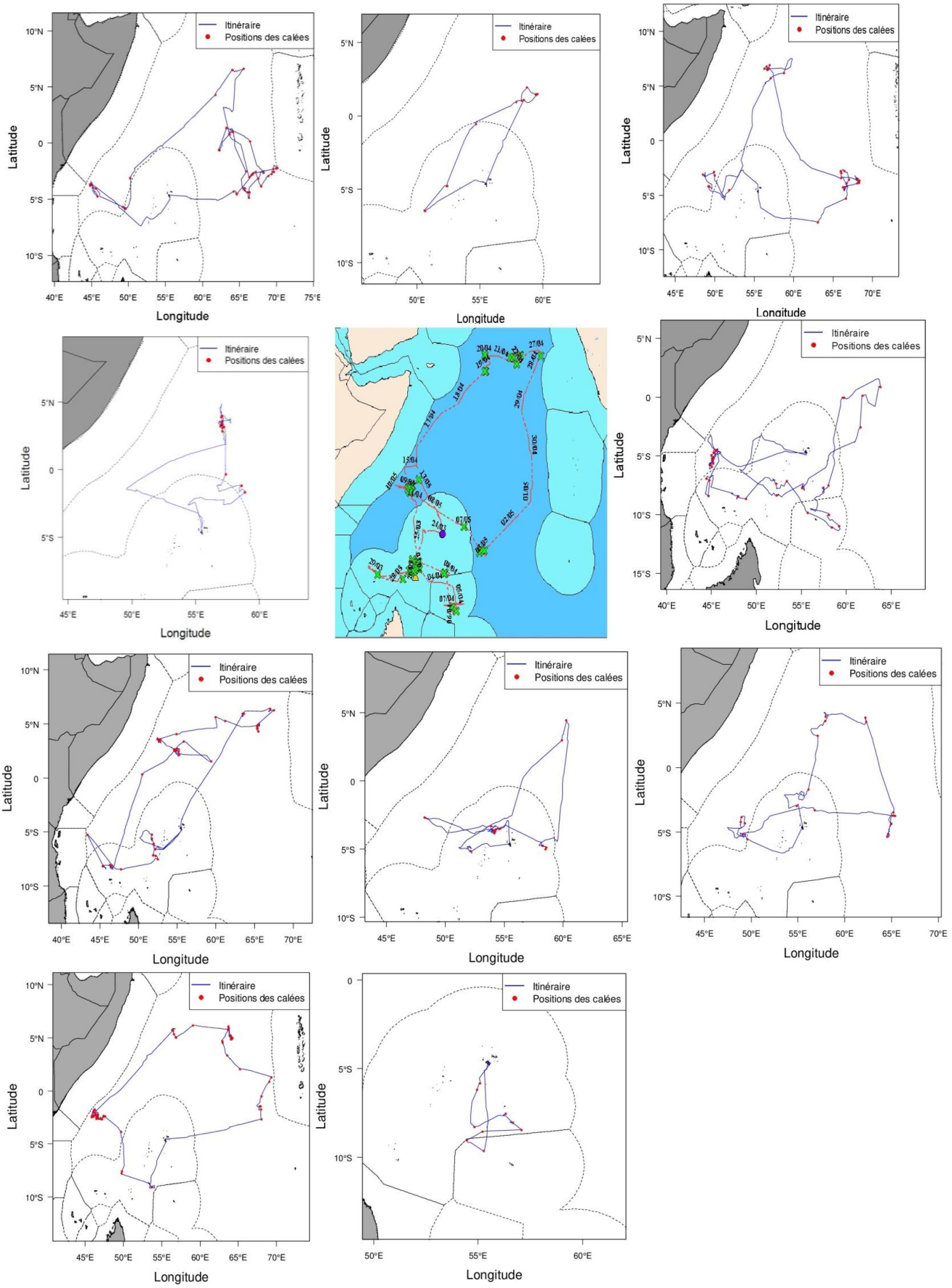
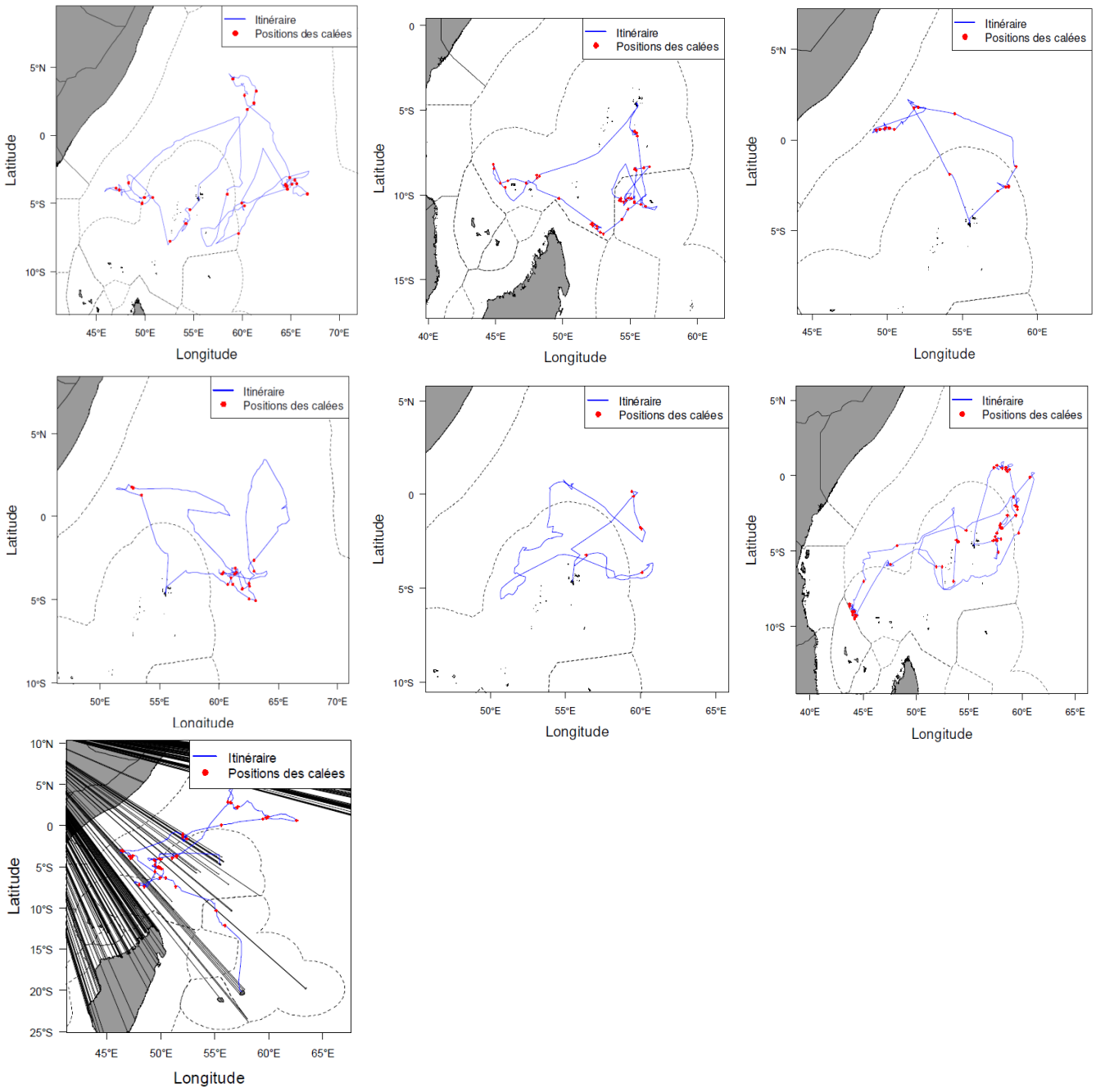


Figure 3b.3 Map of distribution of fishing catch, by species for the national fleet, in the IOTC area of competence (**2019) [Mandatory**



4. RECREATIONAL FISHERY [Mandatory]

Not Applicable. Italian recreational fishing fleet is not operational in the IOTC area.

5. ECOSYSTEM AND BYCATCH ISSUES [Mandatory]

Italy performed the monitoring of the by-catch of otter bottom trawl (OTB) fisheries in 2018, while the longlines fisheries were monitored in 2019. All the Italian GSAs (GSAs 9, 10, 11, 16, 17, 18 e 19) were included in the two monitoring programmes. For the trawlers, a total of 4356 fishing days were monitored. Most species in the by-catch were elasmobranches (20 out of 23), with Squalus blainville and Mustelus mustelus representing the bulk of the by-catch. For longliners (both operating in midwater and surface), ten ports were included in the sampling activities in 5 GSAs (excluding GSAs 10 and 17) and 429 fishing days were monitored. A total of 13 species (1 sea turtle, 7 elasmobranches and 5 teleosts) were observed. The greatest

number of incidental catch corresponded to Pteroplatytrygon violacea and Prionace glauca, as well as the fish Mola mola and the sea turtle Caretta caretta.
In the Mediterranean Sea purse seines gear does not represent a particular problem for the bycatch of vulnerable species. In fact in the few events where an animal was encircled, it remained alive and could be released with the help of support boats (the small boats with lamps). In the LIFE Delphi project interactive acoustic bollards (pingers) to reduce interactions between fisheries and dolphins are used while for other gears (trawl) we will use luminous bollards.
As regards IOTC area, the Agreement Tuna Future "Sharks" aims at implementing the responsible and sustainable fishing practices by reducing or even eliminating the mortality of bycatches species (sharks, rays and turtles) caught accidentally by purse seiners. This consists for example in: i) handling sharks by the tail and dorsal fins; ii) releasing rays using a net.

5.1 Sharks [Mandatory]

The major threat to shark and ray species is overfishing. A global increase of shark and ray fishing is remarked. Sharks usually grow slowly and have few young. This strongly impact with their sustainability. Several elasmobranch species are particularly vulnerable to the effects of bycatch due to their biological characteristics (long lifespan, late age at maturity, large size at birth, and low reproductive rates). In fact, they limit their ability to recover the population from the fishing pressure
According to the International Union for the Conservation of Nature (IUCN) Red List, around 20% of cartilaginous fish are threatened species. Since 2006, a monitoring programme of by-catches of cetaceans, sea turtles, and elasmobranchs by Italian pelagic trawlers has been conducted in the northern central Adriatic Sea. The Adriatic Sea is the most heavily Mediterranean area impacted by fishing activities. In European waters, elasmobranchs are generally considered commercial species, except for Cetorinhus maximus and Carcharodon carcharias. The monitoring programme consists in a survey campaign through observers on board of pelagic trawlers. For each haul, they recorded operational parameters including the following parameters: haul duration, time of net setting, hauling, trawling speed (nm), geographical coordinates (latitude and longitude) and water depth.

5.1.1. NPOA sharks [Desirable]

Not applicable

5.1.2. Sharks finning regulation [Mandatory]

Each EU Regulation is self-applicable to Member States administrations and citizens. The Reg. (CE) n. 605/2013 and the Reg. (CE) n. 1185/2003 aim at ensuring the sustainable exploitation of Elasmobranchii fish species, which includes sharks, skates, rays, since they are often caught as by-catch species. Amongst the other provisions there is the prohibition for the shark finning. This means that in Italian territorial waters and for all Italian fishing vessels, wherever they are operational, the shark finning prohibition applies.

5.1.3. Blue shark [Mandatory]

The blue shark represents one of the most exploited shark species in the Seas and Oceans. It is usually caught with longline fisheries. A high commercially importance is registered for this species and due to this an increase overexploitation of the stock it is remarked during the years. It also represents an important bycatch species. Blue Shark caught by ICCAT Parties' vessels are now subject to Total Allowable Catch (TAC).

Table 3: Total number and weight of sharks, by species, retained by the national fleet in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2016–2020). **[Mandatory]**

Tab. 3 Total number of sharks by species and type of aggregation (2016-2020)

Fish species			Type of aggregation		Destination			
Year	Code	*Scientific name*	Free school	FAD	Discarded alive	Discarded dead	Indeterminated	Retained onboard
2016	FAL	*Carcharhinus falciformis*	118	334	316	139		
2016	OCS	*Carcharhinus longimanus*	23	146	164	5		
2016	PLS	*Dasyatis violacea*		3	3			
2016	RHN	*Rhincodon typus*		1	1			
2016	RSK	*Carcharhinidae*		23	17	9		
2016	TIG	*Galeocerdo cuvier*	1		1			
2017	CCE	*Carcharhinus leucas*		1	1			
2017	FAL	*Carcharhinus falciformis*		752	505	247		
2017	OCS	*Carcharhinus longimanus*		5	5	0		
2017	RMB	*Manta birostris*	1	1	2	0		
2017	RMJ	*Mobula japanica*		1	1			
2017	STT	*Dasyatidae*	2	5	6	1		
2018	CCE	*Carcharhinus leucas*		3	3			
2018	FAL	*Carcharhinus falciformis*	12	1166	625	553		
2018	OCS	*Carcharhinus longimanus*	1	135	132	4		
2018	PLS	*Dasyatis violacea*		8	7	1		
2018	SMA	*Isurus oxyrinchus*		1		1		
2019	FAL	*Carcharhinus falciformis*		681	475	206		
2019	OCS	*Carcharhinus longimanus*		5	8	3		
2019	RMB	*Manta birostris*	1	159	190			
2019	RMJ	*Mobula japanica*		1	1			
2020	FAL	*Carcharhinus falciformis*	2	1045	507	158	392	
2020	OCS	*Carcharhinus longimanus*		1	1			
2020	PLS	*Dasyatis violacea*	1	36	1	1	35	
2020	RMB	*Manta birostris*		1	1			
2020	RMJ	*Mobula japanica*		2	1	1		
2020	RMV	*Mobula spp*	1				1	
2020	RSK	*Carcharhinidae*						

Information on total weight by species is not available.

Table 4: Total number of sharks, by species, released/discarded by the national fleet in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2016–2020). Where available, include life status upon released/discard. *[Note: Multiple tables may be required for this item]* **[Desirable]**

For the information requested please data reported in Table 3.

5.2 Seabirds [Mandatory]

This section is not applicable since the Italian vessel operates in Indian Ocean with purse seine gear only.

The following table and questions provide an example of how this information may be presented, but are not mandatory:

Observer seabird interaction data sheet for the IOTC longline fleet [Desirable]

Name of member state: _____;

Reporting period* or calendar year_____

Species _____

Fishery		Observed					Estimate
Area[1]	Total effort[2]	Total observed effort[2]	Observer coverage[3]	Captures (number)	Mortalities (number)	Live releases (number)	Mortality estimate (number)
Total							

*This field can be used to specify a temporal stratification to the data e.g. season

[1]Spatial stratification (5x5, 10x10 or other – to be determined)

[2]Number of hooks observed hauled

[3]Percentage of all hooks set that were observed hauled

1. How many vessels operated south of 25˚S in the period covered by this report?
2. How many of those vessels used bird scaring lines (as a proportion of total effort)?
3. How many of those vessels used line weighting (as a proportion of total effort)?
4. How many of those vessels used night setting (as a proportion of total effort)?

5.3 Marine Turtles [Mandatory]

In the Mediterranean Sea, a whole range of devices have been developed for the Project TartaLife: circular hooks in longlines, exclusion grids in trawls (TEDs) that could also be useful for some sharks. Italy also used light deterrents in gillnets (UV LEDs) which are very effective for turtles but not easy to apply. Finally, for both turtles and dolphins in the same projects, the use of alternative gear to gillnets (at least during certain periods) have developed and encouraged: collapsible pots that can be used during the periods identified with the greatest interaction between fishing activity and these species.

In 2017 the WPEB was requested by the Commission to review the mitigation measures in Resolution 12/04 On the conservation of marine turtles as scheduled in the annual programme of work. To assist with standardisation of data submissions, CPCs are requested to complete the following table, including data for time/area strata where zero turtle bycatch was recorded. Data should be obtained from logbooks and/or observer programmes, where appropriate, and should cover the period 2009 to 2020, where information is available. Datasets should clearly indicate the source of data.

	Fishery			Observed **				
Year	Lat*	Lon	Total effort	Total effort observed	Species	Captures (number)	Mortalities (number)	Live releases (number)

NB: Effort units should be appropriate for the gear type, i.e., hooks or sets for LL and sets of fishing days for purse seine or gillnet fleets and fishing days for pole and line fleets.

*The resolution should be consistent with the standard data requirements (i.e. 5°x5° for longline and 1°x1° for surface fisheries)

**Indicate data source (e.g. logbooks or observer data)

5.4 Other ecologically related species (e.g. marine mammals, whale sharks) [Desirable]

[add a brief summary of key national strategies related to other ecologically related species such as marine mammals and whale sharks]

Table 5. Observed annual catches of species of special interest by species (seabirds, marine turtles and marine mammals) by gear for the national fleet, in the IOTC area of competence (for the most recent five years at a minimum, e.g. 2016–2020 or to the extent available). **[Mandatory]**

By catch species			Gear	2016		2017		2018		2019		2020	
Code	*Scientific name*	English name		Free school	FAD	Free school	FAD	Free school	FAD	Free school	FAD	Free school	FAD
LKV	*Lepidochelys olivacea*	Olive ridley turtle	Purse seine						1				
RHN	*Rhincodon typus*	Whale shark	Purse seine										1
TTH	*Eretmochelys imbricata*	Hawksbill turtle	Purse seine						1				
TUG	*Chelonia mydas*	Green turtle	Purse seine		1		1		1				
Total					**1**		**1**		**3**				**1**

6. NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS [Mandatory]

6.1. Logsheet data collection and verification (including date commenced and status of implementation)

Currently in Italy, all fishing vessels with LOA> 15 meters are equipped with an electronic recording system of the catch data (e-log book). In the segment of LOA fishing units between 12 and 15 meters, the derogation system provided for by art. 9 paragraph 5 of EU Regulation 1224/2009 ".. operate exclusively in the territorial waters of the flag Member State; o never spend more than 24 hours at sea from departure to return to port .... ". Specifically, Torre Italia uses the e-log book software provided by Italy to electronically record catches and landings from 10/10/2016. The data arrives directly to the Italian databases, which processes and uses them for control and subsequent communications to the European Commission.

6.2. Vessel Monitoring System (including date commenced and status of implementation)

[Provide reference of the legislation, title, date of entry into force and brief summary of the implementation of VMS at national level]

In Italy the Vessel Monitoring System for vessels with LoA more than 24 metres is in place since 2000. Currently, all the vessels with LoA more than 15 metres are equipped with a VMS device as well as vessels with LoA more than 12 metres, operating in international waters. Italian FMC, 24/7 operational, monitors that the devices work properly. The frequency of transmission is established in one hour.

6.3. Observer scheme (including date commenced and status; number of observer, include percentage coverage by gear type)

The purse seine is the only gear in use. Each fishing trip is covered by the deployment of an observer or with the CCTV. Therefore the percentage coverage is 100%

Table 6. Annual observer coverage by operation, e.g. longline hooks, purse seine sets (for the most recent five years at a minimum, e.g. 2016–2020 or to the extent available). **[Mandatory]**

100% of fishing operations is subject to observer coverage or is monitored using CCTVs

Figure 4. Map showing the spatial distribution of observer coverage. **[Mandatory]**

The spatial distribution match with the fishing effort as report in Tab 2A.

6.4. Port sampling programme *[including date commenced* and *status of implementation]* **[Mandatory]**

Not Applicable.

Table 7. Number of vessel trips or vessels active monitored, by species and gear] **[Mandatory]**

Number of vessel trips monitored:

2016	*n. 14*	*gear: PS*	*species: BET, SKJ, YFT*
2017	*n. 11*	*gear: PS*	*species: BET, SKJ, YFT*
2018	*n. 11*	*gear: PS*	*species: BET, SKJ, YFT*
2019	*n. 9*	*gear: PS*	*species: BET, SKJ, YFT*
2020	*n. 11*	*gear: PS*	*species: BET, SKJ, YFT*

Table 8. Number of individuals measured, by species and gear] **[Mandatory]**

Usually all specimens of target species are measured before being rejected on the contrary, regarding the non-target species usually about 20% of the specimens are measured.

6.5. Unloading/Transhipment of flag vessels [including date commenced and status of implementation] **[Mandatory]**

Table 9. Quantities by species and gear landed in ports located in the IOTC area of competence **[Mandatory]**

Table 10. Quantities by species and gear transhipped in ports located in the IOTC area of competence **[Mandatory]**

6.6. Actions taken to monitor catches & manage fisheries for Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish [Mandatory]

Not Applicable

6.7. Gillnet observer coverage and monitoring [Desirable]

Not Applicable

6.8 Sampling plans for mobulid rays [Mandatory]

Not Applicable

7. NATIONAL RESEARCH PROGRAMS [Desirable]

[a description of research activities covering target and non-target species e.g. biological studies supporting stock assessments; composition of the catch according to length, weight and sex; research on environmental factors, abundance/biomass surveys, oceanographic and ecological studies, etc.]

7.1. National research programs on blue shark

[Res 18.02 paragraph 5: CPCs are encouraged to undertake scientific research on blue shark that would provide information on key biological/ecological/behavioural characteristics, life-history, migrations, post-release survival and guidelines for safe release and identification of nursery grounds, as well as improving fishing practices. Such information shall be made available to the Working Party on Ecosystem and Bycatch and Scientific Committee through working documents and the national Annual Reports.]

7.2. National research programs on Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish

[Res 18.05 paragraph 11: CPCs are encouraged to undertake scientific research on key biological/ecological/behavioural characteristics, life-history, migrations, post-release survival and guidelines for safe release, identification of nursery grounds, improving selectivity of fishing practices and fishing gears, for Striped Marlin, Black Marlin, Blue Marlin and Indo-pacific Sailfish. The results of such researches shall be made available to the Working Party on Billfishes and the Scientific Committee through working documents and their national Annual Reports.]

7.3. National research programs on sharks

[Res 17.05 paragraph 11: CPCs shall undertake research to: a) identify ways to make fishing gears more selective, where appropriate, including research into the effectiveness of prohibiting wire leaders; b) improve knowledge on key biological/ecological parameters, life-history and behavioural traits, migration patterns of key shark species; c) identify key shark mating, pupping and nursery areas; and d) improve handling practices for live sharks to maximise post-release survival.]

7.4. National research programs on oceanic whitetip sharks

[Res 13.06 paragraph: 6. CPCs shall, where possible, implement research on oceanic whitetip sharks taken in the IOTC area of competence, in order to identify potential nursery areas.]

7.5. National research programs on marine turtles

[Res 12.04 paragraph 10: 10. All CPCs are requested to, where appropriate undertake research trials of circle hooks, use of whole finfish for bait, alternative FAD designs, alternative handling techniques, gillnet design and fishing practices and other mitigation methods which may improve the mitigation of adverse effects on marine turtles.]

7.6. National research programs on thresher sharks

[Res 12.09 paragraph: 6. CPCs shall, where possible, implement research on sharks of the species Alopias spp in the IOTC area of competence, in order to identify potential nursery areas.]

Table 8. Summary table of national research programs, including dates. [currently underway]
Example only

Project title	Period	Countries involved	Budget total	Funding source	Objectives	Short description
Programme régional de marquage de thons	2016–2020	EU – France and Spain		ED- DG FISH	Observer program: collection of bycatch data	

8. IMPLEMENTATION OF SCIENTIFIC COMMITTEE RECOMMENDATIONS AND RESOLUTIONS OF THE IOTC RELEVANT TO THE SC. [Mandatory]

Respond with progress made to recommendations of the SC and specific Resolutions relevant to the work of the Scientific Committee [to be updated annually to include most recent Conservation and Management Measures adopted by the Commission].

Table 9. Scientific requirements contained in Resolutions of the Commission, adopted between 2012 and 2020.

Res. No.	Resolution	Scientific requirement	CPC progress
11/04	On a regional observer scheme	Paragraph 9	
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–10	
12/06	On reducing the incidental bycatch of seabirds in longline fisheries.	Paragraphs 3–7	
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	

Res. No.	Resolution	Scientific requirement	CPC progress
13/04	On the conservation of cetaceans	Paragraphs 7– 9	
13/05	On the conservation of whale sharks (*Rhincodon typus*)	Paragraphs 7– 9	
13/06	On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries	Paragraph 5–6	
15/01	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–10	
15/02	Mandatory statistical reporting requirements for IOTC Contracting Parties and Cooperating Non-Contracting Parties (CPCs)	Paragraphs 1–7	
17/05	On the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 6, 9, 11	
18/02	On management measures for the conservation of blue shark caught in association with IOTC fisheries	Paragraphs 2-5	
18/05	On management measures for the conservation of the Billfishes: Striped marlin, black marlin, blue marlin and Indo-Pacific sailfish	Paragraphs 7 – 11	
18/07	On measures applicable in case of non-fulfilment of reporting obligations in the IOTC	Paragraphs 1, 4	
19/01	On an Interim Plan for Rebuilding the Indian Ocean Yellowfin Tuna Stock in the IOTC Area of Competence	Paragraph 22	
19/03	On the Conservation of Mobulid Rays Caught in Association with Fisheries in the IOTC Area of Competence	Paragraph 11	

9. LITERATURE CITED [Mandatory]