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ACTUALIZACIONES DE LOS INFORMES ANUALES RECIBIDOS DESPUÉS DE LA PRIMERA
PUBLICACIÓN**

This addendum contains the updates of the annual reports received after the first publication.
Cet addendum contient les actualisations des rapports annuels reçus après la première publication.
Este addendum incluye las actualizaciones de los informes anuales recibidos después de la primera publicación.

- **European Union** – Part I and II summary tables.

**ANNUAL REPORT OF THE EUROPEAN UNION
RAPPORT ANNUEL DE L'UNION EUROPÉENNE
INFORME ANUAL DE LA UNIÓN EUROPEA**

SUMMARY

This report presents the fishing activities performed by the EU fleet in the ICCAT Convention area in 2020. The EU Member States with fleets actively fishing in the ICCAT Convention area in 2020 were the following: Croatia, Cyprus, France, Greece, Ireland, Italy, Malta, the Netherlands, Portugal, and Spain. The report covers also, where relevant, the fishing activity of the United Kingdom's fleet. The EU fleet is composed of around 6,000 commercial vessels with a great diversity in terms of vessel length and fishing gears involved in the different fisheries. Fishing gears include purse seine, longline, pole-and-line, hand-line, mid-water trawl, troll, bait-boat, trap, harpoon, and sport and recreational fishing gears. The EU fleet operates in both the Atlantic and Mediterranean Sea. Most of the species and stocks regulated by ICCAT are targeted by the EU vessels are: Atlantic and Mediterranean bluefin Tuna, Atlantic swordfish, Mediterranean swordfish, tropical tuna (Skipjack, yellowfin and bigeye tuna), Atlantic albacore, Mediterranean albacore, blue and white marlins, sharks and small tuna species (bullet tuna, Atlantic bonito, frigate tuna, little tunny and dolphinfish). Some of these species are caught as by-catch. In 2020, the UK fleet composed of two UK vessels fishing for the EU quota. The UK fleet operates in the Atlantic and targets Northern albacore with pair trawl gear. In 2020, the total reported EU and UK catches for the main species regulated by ICCAT in the Atlantic Ocean and Mediterranean Sea amounted to 197,821 t, which represent a decrease of 24% compared to 2019, partly due to the COVID19 pandemic. The EU and UK fishing patterns remained consistent compared to previous years, with 47% of the 2019 catches corresponding to tropical tunas (yellowfin, bigeye and skipjack), 17% to sharks, and 14% to albacore. SKJ, YFT, BSH, ALB, BFT, BET and SWO continued to be the most important resources exploited by the EU and UK fishing fleets. The EU continues to engage significant financial resources for the funding of studies and research activities in the context of the RFMOs to which it is a member. Research activities related to ICCAT fisheries are also carried out at national level by the EU Member States and United Kingdom.

RÉSUMÉ

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RESUMEN

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Part I (Information on fisheries, research and statistics)

Section 1: Annual fisheries information

1.1 Description of the EU fleet and EU fishing activities

The EU fleet is composed of around 6,000 commercial vessels. The total EU catches reported for the main species regulated by ICCAT in the Atlantic Ocean and Mediterranean Sea, where the EU fleet operates, amounted 197,821 t.

Most of the species and stocks regulated by ICCAT are targeted by the EU vessels: Atlantic and Mediterranean bluefin Tuna (BFT), Atlantic swordfish (N-SWO, S-SWO), Mediterranean swordfish (Med-SWO), tropical tuna (Skipjack (SKJ), yellowfin (YFT) and bigeye tuna (BET)), Atlantic albacore (N-ALB, S-ALB), Mediterranean albacore, blue marlins (BUM), sharks and small tuna species (bullet tuna, Atlantic bonito, frigate tuna, little tunny and dolphinfish). Some of these species are caught as by-catch.

The EU fishing patterns remained consistent compared to previous years, and SKJ (23%), BSH (16%), YFT (19%), ALB (14%), BET (6%), BFT (10%) and SWO (8%) continued to be the most important resources exploited by the EU fishing fleet. The number of fishing vessels > 20m remained also stable and no major changes are expected in the near future.

The EU fleet uses a wide range of fishing gears including purse seine, longline, pole-and-line, hand-line, mid-water trawl, troll, bait-boat, trap, harpoon, and sport and recreational fishing gears. The contribution to catches by the different fleet segments is shown in **Table 3**.

1.1.1 Fleets operating in both Atlantic and Mediterranean

The Spanish fleet

No significant change took place in the EU-Spain fisheries targeting tuna and tuna-like species in the ICCAT Convention in 2020 compared to previous years.

The Spanish fleet mainly targets tropical tuna (skipjack, yellowfin and bigeye tuna), blue shark, albacore, swordfish and bluefin tuna. Purse seiners, longline, surface longline, drifting longline, industrial and artisanal bait-boats, and traps compose the Spanish fleet.

In the Atlantic Ocean, catches of Eastern bluefin tuna take place in tuna traps located in the Strait of Gibraltar and, to a lesser extent, by bait boat fisheries in the Canary Islands, Strait of Gibraltar and the Bay of Biscay. In the Mediterranean Sea, purse seiners, followed by longlines are responsible of most of the catches of bluefin tuna. The main fishing grounds are in the area around the Balearic Islands and the Alboran Sea.

Swordfish is caught by surface longline in the Atlantic Ocean, and mainly by drifting longline in the Mediterranean Sea, with minor catches by other gears. The use of semi-pelagic longline has grown in the latest years, resulting in a higher average weight of individuals and a reduction of the by-catch. Swordfish catches in the Atlantic Ocean and Mediterranean Sea amounted to 8,885 t in 2019. The annual catch in the Atlantic Ocean by surface longline was 7,337 t (3,112 t and 4,224 t from the north and south Atlantic stocks, respectively). Total catch in the Mediterranean sea was estimated at 1,549 t.

In the north-eastern Atlantic, around 400 artisanal baitboat and trolling vessels with base ports in the Cantabrian Sea and the coast of Galicia engage in the surface fishery for albacore. The surface longline fisheries targeting swordfish in the Atlantic Ocean also catches this species occasionally. In the area around the Canary Islands, albacore tuna is caught by the baitboat fishery, and in the Mediterranean Sea it can be caught by longline, trolling and other minor gears. Catches of Albacore tuna in the Atlantic Ocean and Mediterranean Sea in 2019 totalled 16,569 t.

Catches of tropical tunas amounted to 72,416 t in 2019, representing 59% of the EU catches of those species. Three segments of the Spanish fleet target tropical tunas:

- The purse seine fishery: the most important, in terms of total catches, in the ICCAT Convention Area, it targets yellowfin and skipjack tuna (although other species, like bigeye and other small tuna species, are also captured during the fishing operations). In 2020, 11 purse seiners were active in the Atlantic.
- The Senegal baitboat fishery: mainly based in the port of Dakar, it fishes tropical tuna swimming in free schools and, in the last years also in association with fish aggregating devices. Its target species are yellowfin, bigeye and skipjack tuna. In 2020, 7 bait boats have targeted tropical tunas in the Atlantic.
- The Canary Islands baitboat fishery: it operates in the archipelagic waters and in the neighbouring areas of the Canary Islands, with artisanal bait boat vessels. There are two fleet segments, one with a gross register tonnage (GRT) < 50 t, which fishes mainly on free schools, and another one with GRT > 50 t which mainly fishes using the vessels as aggregating devices.

Small tuna species are socio-economically important in the Mediterranean Sea, as well as for surface and trap fisheries off southern Spain. In terms of yields, the purse seine fleet fishing in the eastern tropical Atlantic accounts for the majority of the catches of small tuna. Total small tuna catches by EU-Spain in 2020 are estimated at 1,899 t (3,513 t in 2019).

Nominal pelagic shark catches by the Spanish fleet in 2020 were 28,753 t (36,876 t in 2019), with 27,075.0 t of blue shark accounting for 94% of the total (27,041.83 t and 33,56 t in the Atlantic and Mediterranean Sea respectively), 1,669.0 t of Shortfin mako and 8.5 t of other pelagic shark species. Catches of porbeagle and of the genera *Alopias*, *Carcharhinus* and *Sphyrna* were null.

The French fleet

France has a great diversity of active vessels and fleets fishing for ICCAT stocks: Eastern Atlantic and Mediterranean bluefin tuna, Northern Atlantic albacore, Mediterranean and Northern Atlantic swordfish, and Tropical tunas (skipjack, yellowfin, and bigeye tuna) in West Africa and in the Gulf of Guinea. The French fleet uses a wide range of gears: purse seine, longline, pole-and-line, hand-line, trawls, nets, and sport or recreational fishing gears.

The French nominal catches declared in Task I for the main species regulated by ICCAT in the Atlantic Ocean and Mediterranean Sea amounted to 44,908.49 t in 2020 including landed catches, as well as live and dead discards (details in **Annex I**). 72.34% of these catches (32,038.65 t) correspond to major tropical tunas, and the remaining 28.65% mainly to Northern Atlantic albacore (10.58%) and bluefin tuna (12.94 %). Sharks and rays accounts for 0.46% of total catches.

There were no major changes in the Eastern bluefin Tuna fishery. The 2020 fishing year was easier than 2018 and 2019 in the Gulf of Lions, which is likely linked to favourable environmental conditions (a recent published analysis shows that climatic aspects play a role in terms of tuna availability in the Gulf of Lions).

France has issued 249 professional fishing licenses and 12,244 recreational fishing licenses for bluefin tuna in the Eastern Atlantic and the Mediterranean in 2020 (details in **Table 20 in Annex I**). French vessels reported 5,812.12 t of bluefin tuna catches for 2020. 90.66% of these catches (5,269.14 t) concerns the Mediterranean Sea. In the Mediterranean Sea, bluefin tuna are mainly caught by purse seine vessels since the 1970s. Until 2008, their catch level was partly determined by environmental factors influencing the availability of bluefin tuna to the fishing gear. From mid-May to mid-June, most of the purse seine catches are between 180 and 250 cm (140 to 250 kg). The development of trade with Japan in the mid-1990s, followed by fattening, has led to the targeting of large fish. For its part, the Mediterranean artisanal fishery caught 555.05 t in 2020, by using mainly longlines (447.58 t), and secondarily pole-and-line gear (103.08 t).

In the Atlantic, Northern albacore remains the main targeted species of French vessels involved in tuna fisheries. However, with 542.98 t caught in North-East Atlantic in 2020, bluefin tuna is a significant resource, including as a primary target for bait-boats operating in the Bay of Biscay. The remaining fleet with bycatch of bluefin tuna used pelagic trawls.

Recreational vessels caught 1,563 specimens of bluefin tuna, representing 61.01 t, in both Atlantic and Mediterranean Sea, and corresponding to 1% of total catches. Some 77.57 % (47.33 t) of the French recreational catches took place in the Mediterranean Sea. France implements various measures to meet its ICCAT and European obligations about bluefin tuna sport and recreational fishery: setting a quota specifically allocated to this category, mandatory authorization and declarations of landings, systematic tagging.

Swordfish are occasionally caught in the North-East Atlantic by a small-scale fishing fleet targeting albacore. In 2020, five longliners, 50 trawlers, and 3 gillnet vessels reported bycatch of Northern Atlantic swordfish amounting to 89.5 t. French vessels do not actively fish for Southern Atlantic swordfish, and report only incidental catches.

In the Mediterranean Sea (mainland and Corsica), the artisanal longline fleet fishing for bluefin tuna also targets swordfish for part of the year. In 2020, France issued 107 fishing licenses for Mediterranean swordfish, including longliners, trawlers, gillnets and trammel nets. French catches of Mediterranean swordfish amount to 110.25 t for the year 2020. France does not allow anglers to land Mediterranean swordfish. Only catch-and-release is allowed in recreational fishing.

In 2020, France issued 125 fishing licenses for Northern Atlantic albacore, including longliners, pole-and-line vessels and trawlers. French catches of Northern Atlantic albacore amount to 4,752.86 t (7,880.93 t in 2019). These catches were mainly made by pelagic trawlers.

French vessels do not actively fish for Southern Atlantic albacore, and report only incidental by-catch, amounting 10 t in 2020 (2.94 t in 2019). Although France is not concerned by this fishery, 9 purse seiners larger than 60 meters in length overall, 1 bait-boat, 13 longliners and 25 other artisanal vessels larger than 20 meters in length overall were allowed to catch this species in 2020.

Mediterranean albacore is caught very accidentally and infrequently by French longliners. Artisanal longliners and pole-and-line vessels caught 15 t of Mediterranean albacore in 2020.

In 2020, France issued 33 fishing licenses for tropical tunas, including 9 licences for purse seiners superior to 60 meters in length overall, 1 bait-boat, 13 longliners and other artisanal vessels superior to 20 meters in length overall. No changes were observed for the French tropical tuna fishing fleets, purse seiners and bait boat, in 2020. The estimated total landings of tropical tunas in 2020 reached 31,149.09 t with 3% by the bait boat fishery and 97% by the purse seine fishery. The skipjack is the dominant species for the bait boat fishery accounting for 71% of total landings while contributions of skipjack and yellowfin amount to 40.2% and 51.8%, respectively for purse seiners (**Table 16 in Annex I**).

Compared to 2019, these landings in 2020 correspond to a decrease of 47% for the bait boat and of 29% for the purse seine fisheries, a decrease partially due to the COVID-19 pandemic (**Figure 1**).

The fishing activity of the purse seine fishery corresponds to two fishing modes: the free school activity and the fishing on floating objects (FOBs) either natural or principally man-made and called fish aggregating devices (FAD).

The deployment of Fishing Aggregating Devices (FADs) has been declared in logbooks of the purse seiners and supply vessels since 2014. In 2017, the supply vessels with a French flag left the Atlantic Ocean to the Indian Ocean. The total number of FAD deployment increased to around 2,500 in 2017, corresponding to an average of 250 per vessel. In 2020, the estimated number of FAD deployments was 1,789, corresponding to an average of 198 FADs per vessel.

The volume of landings per fishing mode in 2020 reached 15,010 t (19,086 t in 2019) (44.9 % of the total landings of the French purse seine fishery) and 15,251 t (23,391 t in 2019) (55.1% of the total landings of the French purse seine fishery) for the free school and the FAD fishing modes, respectively. However, the catch composition in landings differs between fishing modes. Catch composition on free school (FSC) was usually dominated by yellowfin tuna, whereas it was dominated by skipjack tuna on fishing operations on floating objects equipped or not with a sounder and GPS buoys (FOB). In 2020, for catches on FSC, yellowfin tuna represented 89% of the total while skipjack and bigeye tunas represented 4.46% and 6.06% of catches, respectively. Regarding catches from FAD sets, skipjack tuna represented 75.34% of the catch, while yellowfin and bigeye tunas represented 14.93% and 6.87% of catches, respectively (**Table 17** in **Annex I**). The geographical distributions of catches per species and per fishing mode are displayed on **Figure 2**.

The size frequency distributions for the three species collected in 2020 either for both FOB-associated and free school fishing sets, are quite similar with the average frequency distributions observed for the period 2015-2019 (**Figure 3**).

The French fleet occasionally catch sharks. In 2020, 207.62 t of sharks (major and other species) were caught representing 0.36% of total catches.

Fishing in the French Antilles

Fishing for large pelagic fish traditionally took place in Martinique and Guadeloupe using trailing lines around driftwood, and more recently using anchored FADs from open boats equipped with outboard engines. The main species fished are dolphinfish (*Coryphaena hippurus*), Atlantic blue marlin (*Makaira nigricans*) and yellowfin tuna (*Thunnus albacares*). These three species account for more than 70% of the landings of these fisheries.

Large pelagic species are mainly targeted:

- by surface-set hand-lines, on free schools or driftwoods;
- by one-hook hand-lines or vertical drifting lines, around the anchored FADs.

The vessels concerned share their activity between the open sea and the insular shelves. In Guadeloupe and Martinique, two-thirds of fishing trips are on insular shelves and one-third in search of deep-sea species. FADs are primarily operated within 24 miles of the coast, while trolling vessels are mostly outside this limit.

Fishing around FADs was developed in Martinique and Guadeloupe during the 1990s, and it seems to have changed the activity and seasonality of offshore fishing. The fishing around the devices is carried out throughout the year; a part of the fleet continues its activity off between June and December. A Fisheries Information System (Système d'Information Halieutique, SIH in French), designed by Ifremer, collects routinely fishing data since the beginning of 2010 in the French Antilles. In 2020, catches of Atlantic blue

1.1.2 Fleets operating exclusively in the Mediterranean Sea

The EU fleet operating exclusively in the Mediterranean is composed by the Cypriot, Greek, Italian and Maltese fleets and targets Bluefin tuna, Mediterranean swordfish and Mediterranean albacore.

Cypriot fleet

The Cypriot fleet operates exclusively in the Mediterranean Sea and targets the three main ICCAT species: Eastern Bluefin tuna, Mediterranean swordfish and Mediterranean albacore. Small tunas and sharks are not targeted by the Cypriot fleet but can be caught as by-catches in negligible quantities.

The Cypriot large pelagic fleet consists of 40 polyvalent vessels (over 12 meters) that use as main tool surface long lines and one small purse seiner (<24m) authorised to fish only Eastern bluefin Tuna.

No major change occurred in the large pelagic fleet of Cyprus in 2020. The total catches for the 3 main species (eBFT, Med SWO, Med ALB) reported by Cyprus and regulated by ICCAT in the Mediterranean amounted to around 831 t in 2020, and marked a decrease of 58 t compared to 2019. While catches of bluefin tuna remained around the same levels, catches of swordfish showed a small increase of around six t and those of albacore a decrease of approximately 60 t compared to 2019.

In 2020, Cypriot vessels caught 153 t of bluefin tuna (18.4 % of the total catches), with 58 t by longliners, and 95 t purse seiners. Catches of Mediterranean swordfish amounted to 30 t (3.6 % of the total catches) presenting a small increase compared to 2019.

Mediterranean Albacore is the main species targeted by Cyprus long line fleet. In 2020, 586 t were landed by the longline fleet, which amounts to around 70.1% of the total of the large pelagic fleet landings, and represent a small decrease compared to 2019. According to estimations by surveys, recreational fisheries caught some additional 60t.

The Cypriot fleet does not target small tunas and sharks, but by-catches may sometimes occur in negligible quantities. Although shark catches by Cyprus fishing vessels are negligible, sharks are considered priority species under Data Collection and are recorded whenever observed during on-board and landing biological sampling.

Greek fleet

Various vessel types characterize the Greek tuna-related fishery with quite a variety in length and fishing gears used, as well as landing sites in many different locations dispersed along the long Greek coastline (89 designated ports for bluefin tuna, 146 for swordfish and 238 for various other species), depending on the seasonal and local abundance of target species.

The Greek tuna-related fleets operate mainly in the Aegean & Ionian Seas and the Sea of Crete but may occasionally extend their activities to the international waters of the Mediterranean Sea. Eastern bluefin tuna, Mediterranean swordfish and Mediterranean albacore are the main target species of the large pelagic fisheries, which are mainly caught by means of drifting longlines and handlines. Small tuna-like species, mainly bonitos (BON), little tunas (LTA) and frigate tunas (FRI) are mainly caught by purse-seiners. The bluefin tuna fishing is carried out by a limited number of vessels, essentially during winter and spring months, while all other tuna-like fisheries (including Mediterranean albacore) are spatially and temporarily confined. Fishing for small tunas in particular is carried out on an opportunistic basis. As regards BFT farming, none of the two authorized and declared to ICCAT Greek BFT farms were operational in 2020.

For 2020, Greece authorised 248 fishing vessels to operate in large-pelagic fisheries, which significantly decreased in comparison to 2019 (295), due to the stricter criteria and prerequisites for obtaining a specific large-pelagics authorization.

A total of 93 fishing vessels (28 vessels more than in 2019) were authorised for bluefin tuna by means of drifting surface longlines and handlines. The total landings of bluefin tuna by Greek vessels reached the amount of 353.59 t, appearing as an increase of 40.9 t in relation to 2019 catches. The total bluefin tuna fishing effort of Greek vessels is estimated to have reached up to 1,194 fishing days. Furthermore, Greece authorised 235 fishing vessels to fish for Mediterranean swordfish by drifting surface longlines with total landings of 657.08 t, and 247 fishing vessels were authorized to fish for Mediterranean albacore by drifting surface longlines with total catches of 157.95 t. Catches of small-tunas reached 1,559.35 t. No incidental catches of protected species associated with large-pelagic fisheries were recorded.

Maltese fleet

EU Malta targets three main ICCAT regulated species in The Mediterranean Sea: Eastern bluefin Tuna (*Thunnus thynnus*), swordfish (*Xiphias gladius*) and albacore (*Thunnus alalunga*), as well as other species, in particular small tunas bonito (*Sarda sarda*), bullet Tuna (*Auxis rochei*), dolphinfish (*Coryphaena hippurus*), little tunny (*Euthynnus alletteratus*) and skipjack tuna (*Katsuwonus pelamis*). The Maltese fleet use a wide range of fishing gears, such as lampara nets, purse seines, trammel-nets, set gill nets, long-lines, trolling lines and sport fishing gears (Rod and Reel).

The Maltese fleet exploits the Mediterranean stock of bluefin tuna with one purse seiner and a fleet of long liners. The bluefin tuna catches made by the Maltese fleet in 2020 increased by 14.90% compared to catches made in 2019. The Maltese longlines fleet exploit also the Mediterranean swordfish stock and at a low extent Mediterranean albacore. Maltese catches of the Mediterranean swordfish stock decreased in 2020 by around 11.22% and catches of the Mediterranean albacore stock decreased by 83.52% compared to the catches in 2019. The fluctuations in the swordfish and albacore catch amounts have to be further analysed by taking into consideration standardized catch rates (CPUE) and fishing effort values together with other factors and past catches to be able to conclude if these changes are due to a significant trend for these species.

The Maltese fleet catches of the most significant species of small tunas amounted to 368.91 t in 2020. These species are dolphinfish (DOL), Atlantic bonito (BON), bullet tuna (BLT) and little tunny (LTA). These small tuna species are targeted by artisanal fleets.

The most relevant catches of sharks by the Maltese fleet in the ICCAT Convention Area are the blue shark (*Prionace glauca*) by-catches by the swordfish and bluefin tuna longliners. Catches of blue shark by the Maltese fleet increased by 47.44% compared to 2019.

The composition of catches presents some differences compared to previous year. Details of catches by the Maltese fleet and differences compared to previous years are presented in **Annex I**.

Italian fleet

In 2020, the Italian bluefin tuna fleet consisted of 21 purse seine vessels, 36 long liners and 5 traps. None of the 13 farms authorised by Italy to carry out fattening operations were operational in 2020.

Catches by the Italian fleet represented 10,184 t in 2020. As other fleet operating in the Mediterranean, the Italian fleet mainly caught bluefin tuna (4,731.02 t), Mediterranean swordfish (2,249.76 t) and Mediterranean albacore (1,423.12 t). Catches of small tunas represented 1,780 t in 2020.

1.1.3 Croatian fleet

The Adriatic represents a feeding (nursery) ground for juvenile bluefin tuna, where they come for feeding while the mature individuals leave Adriatic for spawning in Mediterranean. Natural migration and ecology of the species are the reasons why during the bluefin tuna purse seine season there are only juvenile schools present in the Adriatic.

Behavior of juvenile fish during the fishing season is substantially different from that shown by the adults in the rest of the Mediterranean. Juvenile fish aggregates in significantly smaller and scattered schools, grouped based on generation (one-year-old fish groups in separate schools from two-year-old fish, probably because of different feeding patterns – scientific paper SCRS/2016/201). Due to these reasons, individual catches of Croatian Purse seine vessels are small with an average between 600 and 870 specimens per catch depending on the season (based on the analysis of the 5 seasons – 2014-2018).

Because of the lack of aggregation in large shoals, the activity of Croatian fleet must be intensive throughout the entire season and it results in a much higher number of fishing operations than in the rest of the Mediterranean. For instance, in 2018 Croatian fleet achieved 76 fishing operations (72 with catch and 4 resulting in releases) compared to 2014 when the Croatian fleet achieved 59 fishing operations. As a general trend, the number of fishing operations increased with the increase of the quota.

The total number of vessels authorized for participation in bluefin tuna fishery in 2020 was 29, out of which 17 were purse seiners, and 12 were hook and line vessels. The number of purse seine vessels engaged in bluefin tuna fishing season in 2020 increased compared to 2019 (16) while the number of vessels using hook and line gears remained the same (12). The Croatian handline fleet has been stable over the years counting 12 vessels. They all operate exclusively in the Adriatic Sea, and in most cases on the local area with one-day trips. Majority of their catch is placed into the national or the EU market.

As a specificity, in the Adriatic, bluefin tuna are caught by purse seine vessels targeting juveniles for farming over a two-year cycle. All these purse seine vessels were part of a single JFO (joint fishing operation). The total Croatian bluefin tuna quota for 2020 was 952.53 t with an initial distribution of 833.46 t for purse seiners, 90 t to hand-lines and long-lines fleet, 5 t to the sport fishery, 12.5 t to the recreational fishery, 1 t to scientific research and 10.57 t to bycatch.

The total Croatian catch of bluefin tuna by commercial fisheries was 907.65 t in 2020. Out of this amount, 827.46t (91.1%) was caught using purse seines, 6.77 t by coastal artisanal longline and handline fleet, 6.85 t as by-catch by the longline fishery targeting Mediterranean swordfish, and the small pelagic fishery.

The total catch of bluefin tuna by scientific, sport and recreational fisheries was 7.57 t, and all the sports competitions were cancelled due to a COVID-19 pandemic. The total quota allocated for sport was 3.5 t, where 0.5 t were allocated after the end of the purse seine season.

In 2020, Croatia allocated 12.5 t for big game fishing. A set of strict rules applied to the quota owners and vessels engaged in this specific type of fisheries such as obligatory VMS device on board of vessel, obligation of prior notification of landing and authorisation of landing by the Ministry of agriculture, obligatory m-logbook as well as obligatory document accompanying fish caught.

21 long line vessels and 20 handline vessels were authorised for fishing Mediterranean swordfish in 2020 (remaining stable compared to 2019), and catches amounted to 23.13 t decreasing by 32% compared to 2019 (33.43 t). This drop was caused by the COVID-19 pandemic and difficulties on the regional market.

No major changes in fishing patterns were observed in bluefin tuna and Mediterranean swordfish fishery segments operating in the Adriatic in 2020 compared to 2019 other than those caused by the COVID-19 pandemic. bluefin tuna purse seine fleet did not experience major difficulties in quota utilisation during the 2020, with a consumption of 99% of its quota.

The Croatian fleet does not target Mediterranean Albacore, which is reported as by-catch. A total of 2 purse seine vessels (for small pelagics), 1 longline vessel (also authorised for Mediterranean swordfish).

1.1.4 Additional fleets operating exclusively in the Atlantic

The Portuguese fleet

In 2020, no major changes occurred in ICCAT fisheries. Portugal targets eastern bluefin tuna, skipjack, yellowfin tuna, bigeye, albacore, swordfish, marlins and blue shark. These resources are mainly caught by surface longliners from the mainland and by pole and line vessels from the autonomous regions of Azores and Madeira.

From 2019, a directed fishery for eastern bluefin tuna by bait boats from the outermost regions is in place. In 2020, approximately 100 t were allocated to a sectorial quota involving 68 pole and line vessels. Longliners from the mainland and pole and line vessels from the Autonomous Regions target different species; hence, there is no competition between these segments. On the one hand, surface longliners are focused on swordfish and blue shark, taking also advantage, although opportunistic, from other species, such as the mako shark and bill fish (BUM and WHM), caught as by-catch. On the other hand, pole and line vessels from Azores and Madeira target mainly tropical tuna and the bulk of their catches is bigeye and skipjack, but also bluefin tuna.

The Portuguese longline fleet caught 2,070.35 t of North Atlantic swordfish in 2020. Because the current quota level allocated to this segment is considered scarce to its needs, the segment is increasingly targeting other species. By-catch species, despite being secondary in the surface longline fishery, contribute to bring the fishery economic and socially viable while still ensuring the sustainability of the stocks. In terms of fishing effort, no relevant changes to the current situation are foreseen for this fishery.

In Portugal, bigeye tuna is mainly caught by the pole and line vessels and hand-liners artisanal fleets of the Autonomous Regions of Azores and Madeira, which are responsible for the bulk of the national catches of tropical species. This is a crucial stock for these fleet segments highly dependent of this stock. Catches of bigeye tuna by the Portuguese fleet amounted 3,069.58 t in 2020. No changes in the current fishing pattern for this stock are expected in the upcoming years.

Catches of North-Atlantic albacore by the Portuguese fleet amounted 1,595.32 t in 2020. North-Atlantic albacore is mostly targeted by pole and line vessels. The continuous lack of occurrence of bigeye tuna in the waters around Azores and Madeira in recent years has led to an increasing importance of this stock. The number of vessels operating in this fishery is stable and substantial changes are not expected. However, it is expected there will be a shift of the fleet currently targeting bigeye tuna to North-Atlantic Albacore in the future, due to changes in the spatial distribution of bigeye tuna affected by the use of FADs in the Gulf of Guinea and preventing juveniles from following its regular course.

The southern component of the albacore stock is fished by the Portuguese surface longliners operating in the southern hemisphere. The number of vessels engaged in fishing activities in this area is not comparable to the north hemisphere, as approximately nine vessels are “active” during the year in a fishery targeting swordfish and blue shark, but taking advantage of any opportunistic catches of this stock that may occur.

Catches of South-Atlantic albacore and swordfish by the Portuguese fleet amounted 1.595 t and 309.76 t respectively.

In 2020, the bulk of the bluefin tuna quota was allocated to two traps. Portugal has a directed fishery by artisanal/baitboats of the outermost regions of Azores and Madeira under a sectorial quota. All other fishing segments were allowed to catch this species as by-catch within the limits established for accidental catches. Catches of bluefin tuna by the Portuguese fleet amounted 591.98 t in 2020.

Billfish are not targeted by the Portuguese fleet and catches result from by-catch. These opportunistic catches are an important add-on that contributes to bring the longline fishery social and economically viable, while fishing the stock sustainably. In 2020, the Portuguese fleet caught 28.95 t of blue marlin.

Prionace glauca (blue shark) is targeted by longliners as a complement of the swordfish fishery. Hence, we can consider this stock as strategic to the Portuguese longline fleet and its importance as a fishing resource will likely be maintained during the upcoming years. When considering both North and South Atlantic stocks altogether, Portuguese catches in 2020 reached 3,836.28 t.

Unlike blue shark, shortfin mako is not a targeted species, although incidentally catches occur. In the last decade, the Portuguese fleet has drastically reduced catches of shortfin mako, and in 2020, global catches of North and South Atlantic stocks of this species were at 342,14t. In order to operationalize paragraph 3 of Recommendation 17-08, the Portuguese administration has requested an analysis to IPMA (Portuguese Institute for Sea and Atmosphere) to establish a catch threshold per vessel, while considering different elements of the fishery, such as time and area of activity and the different sizes of the fishing vessels. This study considered exclusively data provided by IPMA observers embarked in longliners.

Adjustment measures are in place for several years in order to assure a due balance between fishing opportunities and active fleet, namely by the scrapping of units without their replacement. Measures related with capacity adjustments through the permanent cessation of fishing activities are irreversible as the scrapped units are not replaced. The change that resulted from the kick-off of a directed fishery by the pole and line boats of Azores and Madeira is to be considered also permanent.

Irish fleet

The Irish fishery for tunas and tuna like is restricted to a commercial fishery for northern albacore, north of latitude 5°N. Northern albacore is exclusively targeted with mid–water paired trawls. Since 2016, a bluefin tuna satellite tagging program is ongoing with ICCAT and Stanford University (USA) in the north-western waters of Ireland.

In 2020, 48 vessels were authorised to fish Northern albacore tuna, and 29 of these vessels participated in the fishery, reporting an annual catch of 2,938 t for a total of 115 trips (1250 days at sea), which was about 25% higher than the level of landings the previous year (3,213.17t). Albacore were exclusively targeted with mid–water paired trawls (MWTDD). A total of 23.61 t of broadbill swordfish and 15.15 t of bluefin tuna were reported as bycatch in the Irish northern albacore fishery. Irish boats stayed offshore France and Spain for the full season and landed almost of their catch in those countries. Working with the Irish tuna fisheries improvement project (FIP) Ireland was unable to put a sampler onboard due to COVID but 4 sampling trips were made at sea by “self-sampling”. Data was also collected from 5 port samples for 5 trips landed into Ireland.

In 2018, ICCAT permitted countries in the North-East Atlantic without a bluefin quota to authorise a limited number of sport vessels to target bluefin tuna with the purpose of “tag and release” without the need to allocate a country-specific quota. In 2019, Ireland initiated a conventional tagging programme to implement, co-ordinate and oversee “catch, tag and release” of bluefin tuna by authorised angling charter skippers. In 2020, following an application process, 22 experienced charter skippers were authorised to operate a catch, tag and release bluefin charter fishery from the North West, West and South. Further details are provided in **Annex III**.

Scandinavian fleets

Atlantic bluefin tuna have been a rare sight (if not completely absent) from Danish and Swedish waters since the 1960s, until approximately 2014 when infrequent sightings were reported. The number of observations of the species have since been on the rise, and numbered in the hundreds this year.

In 2017, the first Atlantic bluefin tuna were tagged with electronic tags in Denmark and Sweden. This was the first time bluefin tuna were tagged in Scandinavian waters since the late 1950s and early 1960s, when bluefin tuna were tagged with conventional tags in Norwegian waters (Hamre, 1963; Mather et al., 1995).

For the fourth year in a row, tunas have been tagged in Skagerrak, in waters near Denmark and Sweden at the end of August and beginning of September 2020 (project known as Scandinavian bluefin Marathon) under the auspices of the Danish National Institute of Aquatic Resources and the Swedish University of Agricultural Sciences. This project relied heavily on the participation and dedication of experienced big game anglers who volunteered their time to safely catch and tag bluefin tunas by rod and reel. The tunas were then tagged and sampled. These tagging experiment has been taken up by ICCAT / GBYP regarding Research Mortality Allowance. More details are shown in **Annex III**

United Kingdom fleet

Due to the withdrawal of the UK from the EU and the end of transition period, 2020 is the last year that the EU will be including in its report the activities of the UK vessels as part of the EU. In 2020, there were no significant changes in fleet distribution and fisheries.

For the year 2020, two UK (European Union at that time) vessels were registered to fish with ICCAT Northern albacore with pair trawl gear.

All ICCAT fish were caught in the North East Atlantic. Overall, 101.3 t were caught in the ICCAT area in 2020. This figure includes 106 kg of bonito, 19.9 t of blue shark, 2.7 t of black scabbardfish, 0.66 t thresher shark and 0.64 t of Garfish. UK (EU) uses logbook information in order to gather statistical data.

The TAC for blue shark applied to EU fleets in 2019 did not allocate individual quota to Member States, whilst the 2020 TAC was allocated to Member States, with the UK not specified. Hence, 2020 UK reported landings of blue shark would have been expected to decrease. Any reduction in the 2020 reported landings of blue shark is considered temporary, as for 2021, a revised quota share for the UK-EU was agreed (see ICCAT Circular 4088/2021).

1.2 Effort

Table 2 summarises the fishing effort in total number of trips and no. of hooks for some fleets engaged in the large pelagic fisheries.

Eleven vessels of the French fleet targeting tropical tunas operated in the Eastern Atlantic Ocean, with 1 bait-boat (BB) and 9 purse seiners (PS). This fishing fleet (1 BB and 9 PS) was composed of two vessels of carrying capacity (CC) of 600-800 t, 6 vessels of CC 800-1 200 t, and 2 vessels of CC >1,200 t. The total capacity in 2020, weighted by the months of activity for each vessel, is 9,401 t (**Table 18**).

The number of fishing trips for the French purse seiners was 89 (including trips which have begun in 2019 but finished in 2020 and also trip started in 2020 and finished in 2021) The number of days at sea reached 2,750. These days at sea represent a total nominal effort expressed in terms of fishing days and searching days of 2,052 and 1,741, respectively (**Figure 4**) representing a decrease compared to the nominal fishing effort values estimated in 2019 due to COVID-19 pandemic.

During these fishing days, a total of 1,547 fishing sets were realized, with 1,312 positive sets (i.e. with marketable target tunas in the net) and 235 null sets representing a percentage of positive and null sets of 84,8% and 15.2%, respectively. If we consider the fishing mode, namely fishing operations on floating objects equipped or not with a sounder and GPS buoys (FOBs) versus free school, the number of purse seine fishing sets (PSFS) was 697 on FOBs (mainly FADs) and 850 on FSC representing 45% and 55 % of total sets respectively (**Figure 5**).

The French bait boat active in the Eastern part of the Central Atlantic Ocean realized 10 fishing trips (23 in 2019), representing a total of 133 fishing days (274 fishing days in 2019). This fishing vessel landed 899 tons on both major and minor tunas.

The maximum duration of each fishing trip by Maltese vessels was three fishing days and the maximum number of hooks used by each authorised vessel was 1,800 hooks.

The Cypriot fleet engaged in the large pelagic fisheries realized 1,105 fishing trips with 2,438,100 hooks.

The last day within the 2020 bluefin tuna purse seine fishing season in the Adriatic with registered catch was 2 July. According to Recommendation 19-04, the potential number of fishing days was 51, while in practice the season lasted for 47 days. Out of this number, only 35 days were days with fishing effort and, only 21 days registered catch (60% of “successful days”). The number of fishing days with fishing effort increased in 2020 in comparison to previous years. However, the fleet activity (days with effort and days with catch) has no significant changes in trend. There were 84 individual catches in the 2020 purse seine campaign with an average of 4.9 catches per vessel. The average size of catches in 2020 was 9.85 t, and indicates that the size of individual catches increased compared to 2019, when there were 100 individual catches with an average of 6.25 catches per vessel, and an average size of catch of 7.5t. Catch dynamic and observed catch rates per vessel distinguishes the Adriatic purse seine fishery from Mediterranean in terms of fleet efficiency and catch rates. As for the swordfish fishery in the Adriatic, a set of national rules is in place to ensure monitoring and control of this fleet segment, and establishing the fishing season from 24 May to 31 December, the obligation of VMS for the longline fleet, and a 500-600 hook limitation per vessel

Section 2: Statistics and research

2.1 Fisheries activity

The total reported EU catches for the main species regulated by ICCAT in the Atlantic Ocean and Mediterranean Sea amounted 197,821 t in 2020. There is a decrease of 21% compared to the previous year. Similar to 2019, some 47 % of these catches correspond to tropical tunas (yellowfin, bigeye and skipjack), 17% to sharks and 14% to albacore.

While catches of bluefin tuna (BFT) and yellowfin tuna (YFT) increased by 11% and 10% respectively, catches of albacore (ALB), bigeye tuna (BET), skipjack (SKJ), Blue marlin (BUM) and blue shark (BSH) and Shortfin mako (SMA) decreased by 14%, 36%, 37%, 3%, 33% and 19% and respectively. Catches of swordfish (SWO) remained at the same level (**Tables 1 and 2**).

2.1.1 Bluefin tuna

No major changes have been reported in the bluefin tuna fishery. The dynamics of the season and its overall length can be attributed to the overall weather situation and the behaviour of the fish. The composition of the EU fleet targeting bluefin tuna is showed in **Table 4**.

The EU catches of the Eastern Atlantic and the Mediterranean bluefin tuna in 2020 amounted to 19,021 t (**Table 5**). Around 30% corresponds to catches in the North Atlantic Ocean by Portugal, Spain, France and Ireland, while the remaining catches take place in the Mediterranean Sea (Cyprus, Greece, Malta, Croatia, Italy, France and Spain).

The EU catches of bluefin tuna in 2020 increased by 11% compared to the previous year (**Figure 6**).

2.1.2 Swordfish

The EU catches of swordfish in the three different stocks (Northern Atlantic, Southern Atlantic and Mediterranean) amounted to 15,394 t (**Table 6**). The EU swordfish catches in 2020 remained similar to those in 2019. On a stock by stock basis, EU catches of the Mediterranean stock decreased by 8%, while for the Northern and Southern Atlantic stocks the catches increased by 3% and 5% respectively (**Figure 7**).

2.1.3 Albacore

The Northern Atlantic fishery is the most important stock for the fleets from Spain, France, Portugal and Ireland operating with a variety of gears (mid-water twin trawlers, trollers, bait boats, pole and line and longlines). This species is also caught occasionally by the surface longline fisheries targeting swordfish in the Atlantic.

In accordance with annex VI of Regulation (EU) No 2020/123¹, the distribution between the EU Member States of the maximum number of fishing vessels authorised to fish for northern albacore as a target species in 2020 is shown in **Table 7**.

In the Mediterranean (Spain, Greece, Cyprus, France and Malta), this species is mostly caught with longlines, trolling, and other minor gears, and to a lesser extent with purse seiners.

In 2020, the total EU catches of the three different stocks (Northern Atlantic, Southern Atlantic and Mediterranean) amounted 27,920 t (**Table 8**), decreasing by 14% compared to 2019.

On a stock by stock basis, EU catches of the Southern Atlantic stock increased by 7%, while for the Northern Atlantic and Mediterranean stocks the catches decreased by 15% and 6% respectively compared to 2019 (**Figure 8**).

2.1.4 Tropical Tunas

Three EU fleets (Spain, France, and Portugal) exploit the multispecies fishery of tropical tunas. Purse seine, bait boats and longlines target yellowfin, bigeye and skipjack tuna. Pole and line vessels and handliners/artisanal of the Autonomous Regions of Azores and Madeira fish mainly bigeye tuna.

In accordance with annex VI of Regulation (EU) No 2020/123 the maximum number of fishing vessels at least 20 meters length authorised to fish for bigeye tuna in the ICCAT Convention Area in 2020 is shown in **Table 9**.

In 2020, the catches of these species represented 47% of the EU catches in the ICCAT Convention area. EU catches of Tropical Tuna in the ICCAT Convention Area in 2020 are shown in **Table 10**. On a stock by stock basis, EU catches of the yellowfin and bigeye tuna stocks decreased by 49% and 67% respectively, while for the skipjack stock catches considerably increased by 158% (**Figure 9**) compared to 2019.

2.1.5 Billfish

Except in the case of the French Antilles fleet that actively fish for blue marlin, the EU fleet does not target blue and white marlin and catches result from by-catch. These opportunistic catches are an important add-on for some particular fleets (i.e. the longline fishery of Madeira and Azores), and contributes to bring them social and economically viable. EU catches of Blue marlin and White marlin in 2020 are shown in **Table 11**.

As in previous years, EU vessels were not allowed to fish White marlin in 2020, and a quota zero was established for the whole EU in the Regulation (EU) 2020/123. The EU fleets caught 265 t of Blue marlin in 2020.

2.1.6 Small Tunas

Small tuna species play a significant socio-economic role in the Mediterranean Sea, for artisanal fleets, but are also caught by surface and trap fisheries off southern Spain. However, in terms of yields, the purse seine fleet fishing in the eastern tropical Atlantic accounts for the majority of the catches, carried out on an opportunistic basis in specific areas and seasons. Due to their opportunistic nature, the small tuna fisheries are difficult to monitor and only landing estimates exist for the main species.

¹ Council Regulation (EU) 2020/123 of 30 January 2020 fixing for 2020 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters.

The EU catches of the most significant species of small tunas amounted to 8,423 t (**Table 12**) including mainly frigate tuna (FRI), bullet tuna (BLT), Atlantic bonito (BON), dolphinfish (DOL) and little tunny (LTA) (**Figures 11 and 12**).

2.1.7 Sharks

The most important species of shark caught by the EU fleets are blue shark and shortfin mako.

Blue shark (*Prionace glauca*) is mainly caught by the Spanish and Portuguese fleets, and is the second most important stock for the EU fleet. In the case of Portuguese longlines, blue shark is traditionally fished by the fleet targeting North-Atlantic swordfish, being the two most relevant stocks for the Portuguese longline segment. Other fleets catch blue shark occasionally or as by-catch of the pelagic fleet of trawlers targeting Northern Atlantic albacore, or swordfish and bluefin tuna longlines operating in the Mediterranean.

Shortfin mako is not a targeted species, although incidentally catches do occur. In the last decade, the Portuguese and Spanish fleets have drastically reduced its catches of shortfin mako shark. As in 2019, the EU catches declined in 2020, due to the concerted action with the industry to avoid zones of high concentration of catches identified by fishermen.

The EU total catches for these two species amounted to 30,973 t for blue shark and 2,012 t for shortfin mako in 2020 (**Table 13**), and represent 17 % of the EU catches in the ICCAT Convention area. Compared to the previous year, there was a decrease of 33% for blue shark and 19% for shortfin mako (**Figure 13**).

2.1.8 Incidental catches

EU has been protecting sea turtles by banning capturing or harming sea turtles in any way and by setting closed fishing areas, especially sensitive nesting areas. In addition, sea turtles are a priority species in the Habitat Directive², as well as the Biodiversity Protocol of the Barcelona Convention.

Incidental catches of turtles, seabird or cetaceans by the pelagic longline fleet are recorded by observers through on-board sampling of the catches, as part of the national data collection programmes under the EU Data Collection Framework (DCF).

Portugal has established mitigation measures to avoid incidental by-catches of sea turtles, including encouraging its industry to:

- use of fish bait instead of squid in areas/seasons with high concentration of marine turtles;
- adopt handling methods as to ensure higher survival rates by reducing post-release mortality, including the use of line cutters and de-hooker sticks;
- use of circle hooks in areas/seasons with high concentration of marine turtles;
- have on board adequate equipment for the disentanglement of turtles and given guidance (manuals and instructions) for a proper use of this equipment and for identification of the various species of sea turtles.

Fishermen fishing in areas where the interaction with seabird is likely to occur are encouraged to set the gear after sun set, reduce light to minimum levels and make use of tori lines. Observers on board provide guidance on how to prepare and set tori lines.

The Portuguese Institute for the Ocean and Atmosphere (IPMA), together with the industry, has developed experimental fishing trials to assess the impact of the use of circle hooks, different ganglion line materials and different types of bait on the catches of by-catch and target species. The results

2.2 Sampling activities

In 2020, the EU undertook sampling activities concerning the main species under the competence of ICCAT targeted by its fleets. **Tables 14 and 15** present the number of individuals of each species sampled in the EU.

² Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna.

2.3 Fisheries research

2.3.1 The EU Data Collection Framework

An EU-wide framework for the collection of fisheries data (DCF) is in place since the early 2000s. Under this Framework, co-financed between the European Commission and the Member States and implemented by the relevant research institutes and ministerial departments in each EU coastal Member State, a complete set of information pertaining to the fleets (catch, effort and economic indicators) is compiled. In the ICCAT Convention area, this information focusses among other on bluefin tuna, yellowfin tuna, bigeye tuna, skipjack, albacore, swordfish, Atlantic bonito and a large number of sharks.

In order to ensure a harmonised and coherent collection of the information, scientists of the different EU Member States concerned by ICCAT fisheries hold every year a coordination meeting. Data is regularly made available to scientists in order to run their researches and constitute the basis for the EU contribution to the stock assessment processes undertaken by the ICCAT SCRS.

2.3.2 EU voluntary contributions to the scientific work of international organisations

The EU has earmarked financial resources for the funding of studies and research activities in the context of the RFMOs to which it is a member.

The EU annually allocates a budget to improve the scientific basis for decision making in ICCAT by supporting different activities included in the Work programme of the Standing Committee for Statistics and Research (SCRS) and the 2015-2020 Science Strategic Programme. Those activities include Atlantic-wide research programme for bluefin Tuna (GBYP), Sharks research and data collection programme, Swordfish – stock structure work and the ICCAT MSE process. Up to 2020 an amount of more than 10 million Euros was spent by the EU for the implementation of the GBYP programme, with 1,400,000 € for the phase 9 for improving the scientific knowledge and assessment of Atlantic bluefin tuna. EU Member states research laboratories are particularly active in the context of the GBYP Programme.

Additionally, the ICCAT AOTTP (Atlantic Ocean Tropical Tuna Tagging Programme) is funded by the European Union (DCI-FOOD/2015/361-161) for 90%. This project officially began in June 2015.

2.3.3 EU Research and Technological Development Framework Programme and EU studies

The EU has supported several projects and studies in 2020:

1. EU Research and Technological Development Framework Programme Horizon 2020

The EU Research and Technological Development Framework Programme Horizon 2020 (2014-2020) support a project called Farfish with relevance for ICCAT.

2. Framework Contract for the provision of scientific advice in Fisheries beyond EU Waters (SAFEWATERS 2)

In November 2016, EASME and a Consortium of EU research institutes from France, Portugal, The Netherlands, Spain and United Kingdom, signed a Framework Contract (FWC) for the provision scientific advice for fisheries beyond EU waters in the context of Regional Fisheries Management Organisations (RFMO) and Fisheries Sustainable Partnership Agreements (SFPA) for the period 2016-2018.

These projects and studies are detailed in **Annex II**.

Additionally, the EU Member States research activities at national level on issues related to ICCAT fisheries and voluntary contributions to the scientific work of international organisations are detailed in **Annex III**.

2.3.4 Scientific Observers Programmes

EU is committed to respect the ICCAT obligations in terms of scientific observer's coverage in the different fleets operating in the ICCAT Convention Area. The EU national scientific observers cover the main fisheries in which the EU is involved such as E-BFT (purse seiners, long-liners, traps and bail-boats), N-ALB (pelagic trawlers), SWO (long-liners) and tropical tunas (purse seiners). These observers follow appropriate training courses including data validation training.

The information collected concerns all target and not-target species and, where possible, the collection of data is extended to cover turtles, seabirds and marine mammals. The type of data collected refer to catch, discards, by-catch, vessels and fishing gear characteristics as well as biological parameters such as length, weight, sex, maturity and growth.

More details are provided in **Annex V**.

2.3.5 EU Member States National Research Activities

As described above, the EU Data Collection Framework provides for the collection of fleet-related variables. However, there are also stock-related variables (length composition, growth parameters, maturity information and distribution) which are collected for the most important stocks under this Framework. This information, which constitutes the basis for the provision of scientific advice, is used in different ICCAT Working Groups and serves as basis for the implementation of other complementary research activities.

The research activities related to ICCAT fisheries carried out at national level by the EU Member States are described in **Annex III**.

2.3.6 Participation and contribution to SCRS Working Groups

Researchers from EU-Member States regularly participate to SCRS Working Groups and other ICCAT initiatives. They also regularly contribute to these working groups, presenting scientific papers.

This participation and contributions are detailed in **Annex IV**.

PART I: REPORTING SUMMARY SCIENTIFIC REQUIREMENTS

Req N° (IOMS)	[Previous Req N°]	Requirement	Response
S:GEN01	S01	Annual Reports (Scientific)	15/09/2021
S:GEN02	S02	Task 1 Fleet characteristics (T1FC)	31/05, 25/06, 02/07, 05/07, 07/07, 16/07, 19/07, 30/07, (30/07/2021*), 18/08/2021 UK : 30/06/2020
S:GEN03	S03	Task 1 Nominal catch estimations (T1NC)	09/04, 31/05, 02/06, 08/06, 17/06, 25/06, 02/07, 05/07, 07/07, 12/07, 19/07, 22/07, 26/07, 28/07, 29/07, 30/07 (30/07/2021*), 15/08, 18/08/2021 UK: 30/06/2020
S:GEN04	S04	Task 2 Catch and effort (T2CE)	02/06, 08/06, 25/06, 02/07, 05/07, 07/07, 15/07, 19/07, 22/07, 26/07, 28/07, 29/07, 17/08, 18/08/2021UK: 30/06/2020
S:GEN05	S05	Task 2 Size samples (T2SZ)	08/04, 07/05, 04/06, 02/07, 05/07, 07/07, 19/07, 22/07, 18/08, 07/09/2021
S:GEN06	S06	Task 2 Catch-at-size estimations (T2CS)	04/06, 05/07, 07/07, 09/07, 19/07, 22/07, 29/07, 18/08/2021
S:GEN07	S07	Scientific tagging surveys (inventories)	08/06, 07/07/2021
S:GEN08	S08	Conventional Tagging declaration (releases/recoveries)	08/06/2021
S:GEN09	S09	Electronic Tagging declaration (releases/recoveries)	08/06, 07/07/2021
S:GEN10	S10	Task 3 Domestic observer program data	26/04, 05/07, 07/07, 29/07/2021

Req N° (IOMS)	[Previous Req N°]	Requirement	Response
S:GEN11	S11	Information on implementation of Rec. 16-14	12/08/2021
S:GEN12	S12	Information and data on pelagic <i>Sargassum</i>	There was no information or data to be reported in the reference period.
S:GEN13	S13	Specific information for the fishing vessels that were authorized to carry out pelagic longline fisheries and harpoons in the Mediterranean during the preceding year	See M:SWO 05.
S:BFT01	S15	Task 2 Size samples harvested on farms (BFT)	05/07, 07/07/2021
S:BFT02	S16	Task 2 Size samples from stereoscopic cameras (BFT raw data outputs) OR alternative methodology for estimating size of bluefin tuna	There was no information or data to be reported in the reference period.
S:BFT03	S17	Task 2 Size samples from stereoscopic cameras (BFT at time of caging summary reports)	07/07/2021
S:BFT04	S18	Task 3 Domestic observer program data (BFT)	20/11/2020,
S:BFT05	S21	Details of cooperative research programs on W-BFT to be undertaken	N/A – EU is not involved in the W-BFT fishery.
S:BFT06	S22	Updates to abundance indices and other fishery indicators	N/A – EU is not involved in the W-BFT fishery.
S:BFT07	S23	Information resulting from GBYP related research including new information resulting from enhanced biological sampling activities	N/A – EU is not involved in the W-BFT fishery.
S:BFT09	S53	Report on the scientific activities conducted by vessels operating in the context of a scientific project of a research institute integrated in a scientific research program	30/03, 28/06, 01/07/2021 UK directly sent to ICCAT on 22/09/2020.
S:TRO01	S24	Information from logbooks on BET/YFT/SKJ vessels, including discards	(30/07/2021) UK directly sent to ICCAT.
S:TRO02	S25	Management plans for the use of fish aggregating devices (including steps to minimise ecological impact)	28/12/2020, 26/01/2021
S:TRO03	S44	Task 3 FAD information (tropicals) (month, 1x1 squares, FAD type, etc)	07/07/2021
S:TRO04	S45	Task 3 Support vessels data on tropical fisheries (BB/PS)	07/07/2021
S:TRO05	S46	Task 3 Domestic observer program data (tropicals)	No information to report.
S:TRO10	S46b	Information on electronic monitoring systems (EMS)	No information to report.
S:TRO06	S47	Task 3 Port Sampling Program data (tropicals)	No information to report.
S:TRO07	S48	Historical FAD set data	29/06/2021, 29/07/2021
S:TRO09	S58	Results of trials on electronic monitoring	N/A – No trials were performed.

Req N° (IOMS)	[Previous Req N°]	Requirement	Response
S:BIL03	S55	Statistical methodology used to estimate dead and live discards of marlins / roundscale spearfish	Billfish information on dead/live discards obtained directly from Domestic Observer Programmes PS tropicals and surface longline. PS: 2020 ST09 data reported with raw data (no extrapolations) while in previous years, data were extrapolated using the observed ratio of retained / discarded alive / discarded dead versus total of tropical prickly pear (SKJ + YFT + BET). LL: Same methodology used as PS tropicals.
S:BIL04	S56	Information about their data collection program for artisanal and/or small-scale fisheries	Detailed in the annual report.
S:BIL05	S57	Results of trials on electronic monitoring for BIL	N/A – No trials were performed.
S:SHK01	S32	Plan for improving data collection for sharks on a species specific level	N/A EU has reported specific shark data.
S:SHK02	S50	Results of research and biological sampling on shortfin mako	Detailed in the annual report.
S:SHK03	S51	Information on blue shark	Detailed in the annual report.
S:SHK04	S54	The amount of North Atlantic shortfin mako caught and retained on board as well as dead discards and live releases	02/09/2021
S:BYC01	S37	Provision of existing identification guides for sharks, seabirds and turtles and marine mammals caught in the Convention area	29/07/2021 UK: Identification and handling guides provided on vessels.
S:BYC02	S38	Information on interactions of its fleet with sea turtles in ICCAT fisheries by gear type	29/07/2021
S:BYC03	S39	CPCs shall record data on seabird incidental catch by species through scientific observers in accordance with the Recommendation 10-10 and report these data annually	29/07/2021
S:BYC04	S41	Notification of measures taken on the collection of by-catch and discard data in artisanal fisheries through alternative means	Detailed in the annual report.
S:BYC05	S42	CPCs shall report on steps taken to mitigate by-catch and reduce discards, and on any relevant research	Detailed in the annual report.

Part II (Management implementation)

Section 3: Compliance with reporting requirements under ICCAT conservation and management measures

See reporting summary below.

A summary of activities carried out pursuant to access agreements is included in **Annex I**.

See **Annex II** for more details on single Member States measures taken to implement ICCAT conservation and management measures not included in the Appendix.

PART II – SECTION 3 – REPORTING SUMMARY

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
GENERAL	M:GEN01	GEN0001	Annual Reports	<p>15/09/2021</p> <p>Article 71 of Regulation (EU) 2017/2107 of the European Parliament and of the Council of 15 November 2017 laying down management, conservation and control measures applicable in the Convention area of the International Commission for the Conservation of Atlantic Tunas (ICCAT), provides that each year EU Member States shall submit to the EU Commission an annual report for the preceding calendar year, comprising information on fisheries, research, statistics, management, inspection and IUU fishing prevention activities and any additional information, as appropriate. Additionally, the annual report shall include information on the steps taken to mitigate by-catch and reduce discards, and on any relevant research in that field.</p> <p>Based on the information received, an EU annual report is submitted to the ICCAT Secretariat.</p>
	M:GEN02	GEN0002	Report on implementation of reporting obligations for all ICCAT fisheries, including shark species	<p>15/09/2021</p> <p>ICCAT Recommendations and corresponding provisions regarding reporting obligations have been transposed in EU law as follows:</p> <ul style="list-style-type: none"> • Regulation (EU) 2017/2107 of the European Parliament and of the Council of 15 November 2017 laying down management, conservation and control measures applicable in the Convention area of the International Commission for the Conservation of Atlantic Tunas (ICCAT); • Regulation (EU) 2016/1627 of the European Parliament and of the Council of 14 September 2016 on a multiannual recovery plan for Bluefin tuna in the eastern Atlantic and the Mediterranean, and repealing Council Regulation (EC) No 302/2009 (OJ L 252/1 16.9.2016) • Regulation (EU) 2019/833 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) 2016/1627 (OJ L 141, 28.5.2019, p. 1) • Regulation (EU) 2019/1154 of the European Parliament and of the Council of 20 June 2019 on a multiannual recovery plan for Mediterranean swordfish and amending Council Regulation (EC) No 1967/2006 and Regulation (EU) 2017/2107 of the European Parliament and of the Council (OJ L 188, 12.7.2019, p. 1–24) <p>Furthermore, the catch limits adopted for the stocks managed by ICCAT were fixed in EU law through Council Regulation (EU) No 2020/123 of 27 January 2020 fixing for 2020 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union fishing vessels, in certain non-Union waters.</p>

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
	M:GEN03	GEN0003	ICCAT Compliance Reporting Table	15/08/2021
	M:GEN04	GEN0004	Vessel Chartering - summary report	No information to be reported by EU (for chartering CPC only).
	M:GEN05	GEN0005	Vessel Chartering - arrangements and termination	8 different chartering arrangements in 2020; first one sent on 29/01/2020.
	M:GEN06	GEN0006a	Transshipment reports - at sea	Not applicable – The EU prohibits any vessels to perform transshipments at sea in Union waters, and EU Member States do not allow transshipments at sea beyond EU waters.
	M:GEN06	GEN0006b	Transshipment reports in - port	12/08/2021
	M:GEN07	GEN0007	Transshipment declaration (at sea)	Not applicable – The EU prohibits any vessels to perform transshipments at sea in Union waters, and EU Member States do not allow transshipments at sea beyond EU waters.
	M:GEN08	GEN0008	Carrier vessels authorised to receive transshipments of tuna and tuna-like species in the Atlantic Ocean, either at-sea or in-port	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT (e.g. on 14/12/2020; 22/12/2020).
	M:GEN09	GEN0009	LSPLVs which are authorised to tranship to carrier vessels in the Atlantic Ocean (and subsequent modifications)	Not applicable. No pelagic long line vessels are permitted to tranship.
	M:GEN10	GEN0010a	Points of contact for port entry notifications	See M:GEN 11.
	M:GEN10	GEN0010b	Contact points for receiving copies of Port Inspection reports	See M:GEN 11.
	M:GEN11	GEN0011	List of designated ports into which foreign fishing vessels may request entry	13-01-2021; 14-01-2021; 19-01-2021; 25-01-2021; 28-01-2021; 29-01-2021; 01-02-2021; 02-02-2021; 05-02-2021; 09-02-2021; 10-03-2021; 11-03-2021; 23-03-2021; 26-03-2021; 29-03-2021; 13-04-2021; 15-04-2021; 19-05-2021.
	M:GEN12	GEN0012	Advance notification period required for entry into port of foreign fishing vessels	See M:GEN 11.
	M:GEN13	GEN0013	Report of Denial of Entry or Denial of Use of port	N/A – No Denial of Entry reported.
	M:GEN14	GEN0014	Copies of port inspection reports containing findings of potential non-compliance or apparent infringement (and others where practicable)	27/07/2021; 24/08/2021

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
	M:GEN15	GEN0015	Action taken following port inspection if apparent infringement is found	27/07/2021; 24/08/2021
	M:GEN16	GEN0016	Notification of results of investigation of apparent infringements following port inspection	27/07/2021; 24/08/2021
	M:GEN17	GEN0017	Information of bilateral or multilateral agreements/arrangements that allow for an inspector exchange program designed to promote cooperation	No arrangements for inspector exchange in place.
	M:GEN18	GEN0018	Access agreements and changes	11 – sent on 12/09/2021 Additional information in the annual report.
	M:GEN19	GEN0019	Summary of activities carried out pursuant to access agreements, including all catches	See Annex I .
	M:GEN20	GEN0020	List of vessels of 20 metres LOA or greater	The list runs until 31/12/2021 and this should be considered as being without a final date. There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT. All data on vessels above 20 m was sent within the CP01 report.
	M:GEN21	GEN0021	Vessels 20 m LOA or greater internal actions report	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:GEN23	GEN0023	Techniques used to manage sport and recreational fisheries	As other ICCAT obligations, sport and recreational fisheries are managed by Member States in respect of provisions established by ICCAT. To this extent, such activities are subject to conditions such as: the delivery of permits, the respect of closed seasons, the assignment of a specific quota to such activities, the prohibition of sale of catches deriving from sport and recreational fisheries, the implementation of a catch and release system whenever possible, etc. Recreational fisheries are forbidden by some EU member states. Member States are free to avail of the above instruments or others in order to control such fisheries. In any case, such activities occur within the limit of the quota assigned to the EU and thus its Member States. See Annex II for more details on single Member States.
	M:GEN24	GEN0024	Vessels involved in IUU fishing	Not applicable. This CPC has no information to report on alleged IUU activities at this stage

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
	M:GEN25	GEN0025	Comments on IUU allegations	Not applicable. This CPC has not received information regarding any presumed IUU activities of its fishing vessels nor has any additional information to report at this stage.
	M:GEN26	GEN0026	Trade measures; submission of import and landing data	12/08/2021
	M:GEN27	GEN0027	Data on non-compliance	Not applicable. This CPC has no information on suspected non-compliance of ICCAT measures to report at this stage.
	M:GEN28	GEN0028	Findings of investigations in relation to allegations of non-compliance	Not applicable. This CPC has not received any allegations of non-compliance of ICCAT measures at this stage.
	M:GEN29	GEN0029	Vessels sightings	Not applicable, EU has not information to report.
	M:GEN30	GEN0030	Actions taken with regard to reports of vessel sightings	Not applicable, no sightings of EU vessels.
	M:GEN31	GEN0031	National authority responsible for at-sea inspection and other supporting maritime agencies as may be appropriate and/or National authority responsible for the bluefin tuna trap and farming activities	In 2020, EU has not participated in any pilot programme for the voluntary exchange of inspection personnel to participate in boarding and inspection activities. UK: The Department for Environment Food and Rural Affairs (DEFRA) have lead responsibility for control and enforcement in the UK. This is implemented by agencies of the UK Fisheries Administrations (MMO, Marine Scotland, DAERA, Welsh Government and Departments in Jersey, Guernsey, and the Isle of Man.
	M:GEN32	GEN0032	Designated point(s) of contact (POC) within that authority with responsibility for program implementation	18/12/2019 – No changes to be reported.
	M:GEN33	GEN0033	Reporting on any activities carried out under the pilot program for exchange of inspection personnel	In 2020, EU has not participated in any pilot programme for the voluntary exchange of inspection personnel to participate in boarding and inspection activities.
	M:GEN34	GEN0034	Request for removal of vessel from final IUU vessel list	EU has no vessels on the final IUU vessel list.
	M:GEN35	GEN0035	Emergency Action Plan (EAP) for observer recovery	22/12/2020, 30/03/2021
	M:GEN36	GEN0036	Reports on observer incidents triggering provisions of the EAP, including any corrective action taken	No information to report.
	M:GEN37	GEN0037	Report of lost fishing gear retrieved	No information to report.
	M:GEN38	GEN0038	Report of lost fishing gear not retrieved	No information to report.

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
	M:GEN39	GEN0039	Points of contact to facilitate cooperation on vessel sighting (optional)	No information to report.
BLUEFIN TUNA	M:BFT01	BFT1001	Bluefin tuna farming facilities	39 farms (16 active, 23 currently inactive but subject to be active in the future).
	M:BFT02	BFT1002	Bluefin tuna farming reports	30/08/2021
	M:BFT03	BFT1003	Carry-over of caged fish declaration	08/06/2021
	M:BFT04	BFT1004	Bluefin tuna caging report/declaration	24 final caging reports were sent in / for 2020.
	M:BFT05	BFT1005	Bluefin tuna traps	04/02/2021
	M:BFT07	BFT1007	Fishing, inspection and capacity plans	08/02, 15/02, 27/05, 24/08/2021
	M:BFT08	BFT1008	Farming capacity plan (and revisions if appropriate)	
	M:BFT09	BFT1009	Modifications to fishing plans	15/02, 27/05, 24/08/2021
	M:BFT10	BFT1010	Information on regulations and other related documents adopted for implementation of Rec. 18-02	Not requested by the secretariat this year.
	M:BFT11	BFT1011	Bluefin tuna catches 2020	29/07/2021
	M:BFT12	BFT1012	Bluefin tuna catching vessels	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:BFT13	BFT1013	Bluefin tuna other vessels	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:BFT14	BFT1014	Joint Fishing Operations	20/05/2020
	M:BFT15	BFT1015	VMS messages	VMS messages were transmitted regularly during 2019 and 2020. All failures were investigated and addressed.
	M:BFT16	BFT1016	Joint Inspection Scheme plans	Sent to ICCAT on 2021/02/08 and 2021/02/12.
	M:BFT17	BFT1017	List of inspection vessels	12/12/2021- 196 active inspection vessels.
	M:BFT18	BFT1018	List of inspectors [and agencies]	12/02, 15/04, 31/05/2021- 845 EU inspectors (EFCA: 13, HR:54, CY: 15, FR: 109, GR:151, IE: 92, IT:137, MT: 127, ES: 129, PT:18).
	M:BFT19	BFT1019	Copies of inspection reports from JIS	15/07 (5 reports), 27/07 (6 reports), 28/07(20 Reports); 24/08/2021 (1 Report).
	M:BFT20	BFT1020	Bluefin tuna transshipment ports	13/01, 14/01, 19/01, 25/01, 28/01, 29/01, 01/02, 02/02, 05/02, 09/02, 09/03, 10/03, 11/03, 23/03, 26/03, 29/03, 13/04, 15/04, 19/05/2021
	M:BFT21	BFT1021	Bluefin tuna landing ports	
	M:BFT22	BFT1022	Bluefin tuna weekly catch reports (including traps)	51 reports sent in 2020.

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
	M:BFT23	BFT1023	Bluefin tuna monthly catch reports	Not applicable for EU (western Atlantic BFT fishery only).
	M:BFT24	BFT1024	Dates when entire quota of bluefin tuna has been utilized	EU quota has not been fully utilised in 2020. There is still quota available in 2021.
	M:BFT25	BFT1025	Report on steps taken to encourage tag and release of all fish less than 30 kg/115 cm	Percentage of juvenile catches compared to the global catches of E-BFT is very low as the current model of exploitation of the fleet and traps in most of the EU-MS aims to catch large adult specimens. EU MS promote tagging of released juveniles specimens below the minimum conservation size, and are seeking mechanisms to incentive this practice.
	M:BFT27	BFT1027	BCD Annual Report	25/08, 31/08, 01/09/2021
	M:BFT28	BFT1028	Validation seals and signatures for BCDs	Administrator and validator rights are granted through the eBCD system.
	M:BFT29	BFT1029	BCD Contact points	eBCD contacts points for EU MS are regularly updated in the eBCD system.
	M:BFT30	BFT1030	BCD legislation	Currently covered by Regulation (EU) No 640/2010 of the European Parliament and of the Council of 7 July 2010 establishing a catch documentation programme for bluefin tuna <i>Thunnus thynnus</i> . This Regulation is currently being amended.
	M:BFT31	BFT1031	BCD tagging summary, sample tag	05/02/2021
	M:BFT32	BFT1032	Vessels not included as BFT fishing vessels but known or presumed to have fished E-BFT	No information to report.
	M:BFT33	BFT1033	Data needed for registration in eBCD system	MS of the EU have provided with and regularly update in the eBCD system the necessary information to register all their BFT operators.
	M:BFT34	BFT1034	Report on intra farm transfers and random controls	29/04/2021
TROPICAL SPECIES	M:TRO01	TRO2001	List of BET/YFT/SKJ vessels and subsequent changes	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:TRO02	TRO2002	List of authorized vessels which fished bigeye and/or yellowfin and/or skipjack tunas in previous year	02/07/2021
	M:TRO03	TRO2003	Reports on investigation of IUU activity by BET/YFT/SKJ vessels	No IUU activity has been detected.
	M:TRO06	TRO2006	Data from ICCAT statistical document programs	27/03/2020; 15/09/2020; 30/03/2021; 09/04/2021; 03/05/2021; 15/09/2021
	M:TRO07	TRO2007	Validation seals and signatures for SDPs	There is no specific date for submitting data under this requirement. Whenever a modification,

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
				addition, etc. occurs it is submitted to ICCAT (e.g. 21/01/2020).
	M:TRO09	TRO2009	Quarterly catches of tropical tuna	27/03; 30/04; 30/07; 27/10/2020; 28-02-2021;
	M:TRO10	TRO2010	Steps taken to minimalise ecological impacts of FADs (include in FAD management plan - see also requirement S:TRO:02)	Control and enforcement measures for the FAD are specified in the management plans sent on 28/12/2020, 26/01/2021 (see S:TRO 02).
	M:TRO11	TRO2011	Tropical Tuna Fishing/Capacity plans	26/01/2021
	M:TRO13	TRO2013	Monthly catches of tropical tuna (BET; SKJ; YFT)	30/04; 29/05; 30/06; 31/07; 27/08; 30/09; 30/10; 30/11; 18/12/2020; 31-01-2021; 31-03-2021; 30-04-2021; 31-05-2021; 30-06-2021; 31-07-2021; 31-08-2021; 30-09-2021; 31-10-2021; 30-11-2021; 31-12-2021
	M:TRO14	TRO2014	Weekly catches of bigeye tuna	Not applicable in 2020 (80% catch limit not reached).
	M:TRO15	TRO2015	Dates when entire catch limit of bigeye tuna has been utilized	Not applicable in 2020 (catch limit not reached).
	M:TRO17	TRO2017	Maximum on board by-catch limit for tropical tunas	15/09/2021
	M:TRO18	TRO2018	Measure taken to ensure compliance with TRO 2017	15/09/2021
	M:TRO19	TRO2019	Difference between fishing effort 2018 and fishing effort 2020	No information to report.
	M:TRO20	TRO2020	Results of trials on electronic monitoring	No trials have been performed.
SWORDFISH	M:SWO01	SWO3001	Data from ICCAT statistical document programs	27/03/2020; 15/09/2020; 30/03/2021; 09/04/2021; 03/05/2021
	M:SWO02	SWO3002	Validation seals and signatures for SDPs	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT (e.g. 21/01/2020).
	M:SWO03	SWO3003	List of vessels targeting MED-SWO	20/12/2019; 13/01, 14/01/2020 and subsequent changes.
	M:SWO04	SWO3004	List of sport/recreational vessels authorized to catch Med-SWO	
	M:SWO05	SWO3005	List of special fishing permits for harpoons or longline for highly-migratory pelagic	02/07, 09/07/2021

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
			stocks in the Mediterranean for the previous year	
	M:SWO06	SWO3006	Report on implementation of Med-SWO closure	15/09/2021
	M:SWO07	SWO3007	Development or fishing/management plan for North swordfish	16/08, 18/08/2021
	M:SWO10	SWO3010	List of authorised ports for MED-SWO	13/01, 14/01, 19/01, 25/01, 28/01, 29/01, 01/02, 02/02, 05/02, 09/02, 09/03, 10/03, 11/03, 23/03, 26/03, 29/03, 13/04, 15/04, 19/05/2021
	M:SWO11	SWO3011	Quarterly reports of MED-SWO catches	29/01, 29/04/2021
	M:SWO12	SWO3012	Summary of implementation of tagging programme	05/02/2021
	M:SWO13	SWO3013	List of inspection vessels	12/12/2021- 196 active inspection vessels.
	M:SWO14	SWO3014	List of inspectors [and agencies]	12/02, 15/04, 31/05/2021- 845 EU inspectors (EFCA: 13, HR:54, CY: 15, FR: 109, GR:151, IE: 92, IT:137, MT: 127, ES: 129, PT:18)
	M:SWO15	SWO3015	Specific authorisation for vessels 20m+ LOA for N. SWO	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:SWO16	SWO3016	Specific authorisation for vessels 20m+ LOA for S. SWO	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:SWO17	SWO3017	Maximum onboard by-catch limit of N. SWO	Depending on the EU-Member state, by-catch limits may differ. Additional details are included in the annual report.
	M:SWO18	SWO3018	Maximum onboard by-catch limit of S. SWO	Depending on the EU-Member state, by-catch limits may differ. Additional details are included in the annual report.
	M:SWO19	SWO3019	Copies of inspection reports from JIS	15/07 (5 reports), 27/07 (6 reports), 28/07(20 Reports); 24/08/2021 (1 Report)
	M:SWO20	SWO3020	Fishing plan for Mediterranean swordfish	11/03/2021
ALBACORE				
	M:ALB03	ALB4003	List of Vessels authorised to fish for Mediterranean albacore	17/12/, 20/12/2019; 27/02, 06/03, 09/03/2020 and subsequent changes.
	M:ALB04	ALB4004	Specific authorisation for vessels 20m+ LOA for North Atlantic albacore	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:ALB05	ALB4005	Specific authorisation for vessels 20m+ LOA for South Atlantic albacore	There is no specific date for submitting data under this requirement. Whenever a modification, addition, etc. occurs it is submitted to ICCAT.
	M:ALB06	ALB4006	Maximum onboard by-catch limit of N. ALB	Depending on the EU-Member state, by-catch limits may differ. Additional details are included in the annual report.

Group	Req N° (IOMS)	[Previous Req N°]	Information required	Response
	M:ALB07	ALB4007	Maximum onboard by-catch limit of S. ALB	Depending on the EU-Member state, by-catch limits may differ. Additional details are included in the annual report.
	M:BIL01	BIL5001	Report on the implementation of 19-05 and 16-11	16/09/2020
BILLFISH	M:BIL04	BIL5004	Claim to exemption to release live BUM/WHM/SPF and measures taken to limit application of this exemption to such fisheries	N/A - EU does not apply such exemption
	M:BIL05	BIL5005	Results of trials on electronic monitoring for BIL	No trials have been performed
SHARKS	M:SHK05	SHK7005	Details of implementation of and compliance with shark conservation and management measures	Shark sheet submitted on 16/09/2020. Additional details may be found in the annual report.
	M:BYC01	BYC8001	Report on implementation of Rec. 10-09, paras 1, 2 and 7, as amended by Rec. 13-11, and relevant actions taken to implement the FAO guidelines	Detailed in the annual report
	M:BYC02	BYC8002	Report on implementation of seabird mitigation measures and NPOA for seabirds	29/07, 12/08/2021 Additional details in the annual report
	M:BYC03	BYC8003	Report on steps taken to mitigate by-catch & reduce discards and any relevant research in this field	29/07, 12/08, 15/09/2021
	M:SDP01	SDP9001	Description of pilot electronic statistical document systems	N/A No progress on the implementation of this measure, which is voluntary.
OTHER SPECIES BY-CATCH	M:MIX01	MISC9002	Information and clarification regarding objections to ICCAT Recs	EU has not objected to any ICCAT recommendation.

Section 4: Implementation of other ICCAT Conservation and Management Measures

See **Annex III** for details on single Member States measures taken to implement ICCAT conservation and management measures not included in Section 3 above.

Section 5: Difficulties encountered in implementation of and compliance with ICCAT conservation and management measures

No important difficulties were encountered in 2020.

Table 1 : The EU catches (in tons) by EU Member States in 2020

	BFT	SWO	ALB	YFT	BET	SKJ	BUM	WHM	SMALL	BSH	SMA
Cyprus	153	30	646								
Spain	6068	9462	16302	19618	5997	31928	0,32	0	2825	27075	1669
France	5812	200	4777	17108	2106	12824	235	0,1	1574	60	0,36
Greece	354	657	158						1559		
Croatia	908	23	1						0		
Ireland	16	24	2938								
Italy	4731	2250	1423						1780		
Malta	389	361	13						369		
Portugal	592	2380	1597	129	3070	1033	29	0	210	3836	342
Other	0	7	0								
United Kingdom	0	0	65						106	3	0
Total	19021	15394	27920	36856	11173	45785	265	0,1	8423	30973	2012

Table 2 : EU catches in the ICCAT Convention area in 2020

Species	EU catches (t)
Bluefin Tuna	19021
Swordfish	15394
Albacore	27920
Tropical tunas (BET, SKJ, YFT)	93813
Billfish (BUM, WHM, SAI)	265
Small tunas (FRI, BLT, BON, DOL, LTA)	8423
Sharks (BSH, SMA)	32985

Table 3 : EU Catches by fleet segment in 2020

<i>Fleet</i>		<i>Catches in tn</i>													
<i>Nb of Vessels</i>		<i>BFT</i>	<i>SWO</i>	<i>ALB</i>	<i>YFT</i>	<i>BET</i>	<i>SKY</i>	<i>SAI</i>	<i>BUM</i>	<i>WHM</i>	<i>Small tunas</i>	<i>BSH</i>	<i>SMA</i>	<i>POR</i>	<i>Total</i>
<i>Purse seine</i>	189	11984	1,42	175	34382	4827	14794	9	23	0	5549	1,32	0,45	0	71745
<i>Long line</i>	1001	2011	15157	2388	1437	438	354	200	288	1,03	1472	38276	2456	0,32	64479
<i>Mid water trawl</i>	369	398	126	7606	0,17	66	19	0	0,05	0	520	19	0,66	0	8756
<i>Traps</i>	78	3163	8	0,31	0	0	1,88	0	0	0	387	3	0	0	3563
<i>Hand line</i>	562	351	7	2556	8	63	6	0,03	3,52	0	32	1,25	0,57	0	3028
<i>Trolling</i>	196	0	0	4677	0	0	0	0	0	0	2	0	0	0	4679
<i>Bait boat</i>	381	1040	0,80	10361	1028	5778	7903	0	0,16	0	44	0	0	0	26155
<i>Harpoons</i>	0	1,85	18	0	0	0	0	0	0	0	0	0	0	0	20
<i>Sport Fishing</i>	278	124	0	62	0	0	0	0	0,25	0	0	0	0	0	186
Other	1072	0,61	10	4	0,81	0,25	7	0	0,04	0	166	47	3	0,01	238
Total	4126	19073	15329	27829	36856	11173	23086	209	314,74	1	8172	38347	2460	0,36	182849

Table 4- Composition of the EU fleet targeting bluefin tuna that was active in 2020

<i>Type</i>	<i>EU Fleet (No vessels)</i>
Purse seiner over 40m	28
Purse seiner between 24 and 40m	35
Purse seiners less than 24m	5
Total Purse Seine Fleet	68
Longliner over 40m	0
Longliner between 24 and 40m	1
Longliner less than 24m	138
Total Longline Fleet	139
Baitboat	56
Handline	52
Trawler	49
Trap	13
Small scale	920
Other	61
Total fleet/fishing capacity	1358

Table 5. Provisional EU Catches (in tons) of Eastern Atlantic and Mediterranean bluefin Tuna in the period 2013-2020

	2013	2014	2015	2016	2017	2018	2019	2020
Cyprus	17	18	22	94	109	134	151	153
Spain	2502	2446	2893	3453	4197	5022	5389	6068
France	2414	2419	2819	3396	4002	4774	5381	5812
Greece	178	161	195	218	235	267	313	354
Croatia	389	387	458	519	635	744	831	908
Ireland	13	19	14	34	16	17	6	16
Italy	1938	1946	2273	2734	3196	3869	4286	4731
Malta	155	156	183	212	261	308	338	389
Netherlands	0	0	0	0	0	0	0	0
Portugal	235	243	263	327	429	450	475	592
Denmark	0	0	0	0	0	0	0,24	0
United Kingdom	0	0	0	0	0	0	0	0
Total	7841	7796	9121	10988	13081	15585	17170	19021

Table 6: Provisional EU Catches (in tons) of Swordfish in 2020

	N-ATL	S-ATL	MED
Cyprus	0	0	30
Spain	3586	4442	1434
France	90	0	110
Greece	0	0	657

Croatia	0	0	23
Ireland	24	0	0
Italy	0	0	2250
Malta	0	0	361
Portugal	2070	310	0
United Kingdom	7	0	0
Total	5776	4752	4866

Table 7: Distribution between the EU Member States of the maximum number of fishing vessels authorised to fish for northern albacore as a target species in 2020

Ireland	Spain	France	United Kingdom	Portugal
50	730	151	12	310

Table 8 - EU Catches (in tons) of Albacore in 2020

	N-ALB	S-ALB	MED
Cyprus	0	0	646
Spain	16205	30	67
France	4753	10	15
Greece	0	0	158
Croatia	0	0	1
Italy	0	0	1423
Malta	0	0	13
Ireland	2938	0	0
Portugal	1595	2	0
United Kingdom	65	0	0
Total	25556	41	2322

Table 9: Maximum number of fishing vessels at least 20 meters length authorised to fish for bigeye tuna in the ICCAT Convention Area in 2020

	Spain	France	Portugal
Maximum number of vessels with purse seines	23	11	-
Maximum number of vessels with longlines	190	-	79

Table 10: EU Catches (in tons) of Tropical Tuna in the ICCAT Convention Area in 2020

	Yellowfin (YFT)	Bigeye (BET)	Skipjack (SKJ)
Spain	19618	5997	31928
France	17108	2106	12824
Portugal	129	3070	1033
Other			
Total	36856	11173	45785

Table 11: EU Catches (in tons) of BUM and WHM in 2020

	BUM	WHM
Spain	0,32	0,0
France	235	0,1
Portugal	29	0,0
Total	265	0

Table 12: EU Catches (in tons) of small tunas in 2020

	FRI	BLT	BON	DOL	LTA	Other³
Malta		7	1,25	358	3	
Spain	926	987	334	22	503	53
France	299		119	890	163	102
Portugal	0,14	29	168	6	3	4
Croatia						
Italy	5		570		1204	
Greece	262		342		955	
United Kingdom						106
TOTAL	1493	1023	1534	1277	2832	265

Table 13: EU Catches of Blue shark and Shortfin mako in 2020

	BSH	SMA
Spain	27075	1669
France	60	
Portugal	3836	342
Total	3	

³ Other includes mainly BLF, BRS, WAH and KGX.

Table 14. Length samples and total number of individuals sampled per species in 2020

	Nb of Trip	Nb of trips sampled	Nb of trips with observers	Length samples and total number of individuals sampled per species (N samples/N ind)											
				BFT	SWO	ALB	YFT	BET	SKJ	SAI	BUM	WHM	BSH	SMA	
<i>Purse seine</i>	525	425	342	<i>No samples</i>	1223	3	79	30183	4796	88308	304	341	1	2	2
				<i>No individuals</i>	2488	4	70	30970	5213	120820	392	390	3	3	2
<i>Long line</i>	24365	1522	291	<i>No samples</i>	750	932	124	1	29	1	0	4	0	77	1
				<i>No individuals</i>	2197	9349	1628	337	224	6	38	7	0	825	1
<i>Mid water trawl</i>	2413	190	4	<i>No samples</i>	4	14	23	0	3	0	0	0	0	4	0
				<i>No individuals</i>	35	43	3016	0	4	0	0	0	0	8	0
<i>Traps</i>	353	168	122	<i>No samples</i>	122	0	0	1	0	0	0	1	0	0	0
				<i>No individuals</i>	1211	0	0	19	0	0	0	1	0	0	0
<i>Hand line</i>	1293	401	15	<i>No samples</i>	382	336	337	337	338	336	336	336	336	1	0
				<i>No individuals</i>	1389	0	1	15	14	0	0	0	0	0	1
<i>Trolling</i>	97	1	1	<i>No samples</i>	0	0	0	0	0	0	0	0	0	0	0
				<i>No individuals</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Bait boat</i>	10177	971	94	<i>No samples</i>	477	472	491	617	822	3512	472	472	472	0	0
				<i>No individuals</i>	7264	0	805	89	1637	700	0	0	0	0	0
<i>Harpoons</i>	0	0	0	<i>No samples</i>	0	0	0	0	0	0	0	0	0	0	0
				<i>No individuals</i>	0	0	0	0	0	0	0	0	0	0	0
<i>Sport Fishing</i>	4	40	4	<i>No samples</i>	29	0	0	0	0	0	0	0	0	0	0
				<i>No individuals</i>	31	0	0	0	0	0	0	0	0	0	0

Table 15. Number of Length Samples and total number of individuals sampled per species (N samples/N ind)

		ALM	ALN	BAF	BLM	BON+BLT	BRZ	CFW	CGX	CNT	DIY	DKK	DOL	DYL	EHN	FAL	FRI + LTA	GBA	KYS	LGH	LKV	LKY	
Purse seine	<i>No samples</i>	67	26	2	2	0	0	1	1	19507	1	5	1490	0	3	1025	1961	561	298	0	103	0	
	<i>No individuals</i>	67	26	2	2	0	0	1	1	19507	1	5	1490	0	3	1025	1961	561	298	0	103	0	
Long line	<i>No samples</i>												1										
	<i>No individuals</i>												32										
Traps	<i>No samples</i>												1										
	<i>No individuals</i>												2										
Bait boat	<i>No samples</i>																						
	<i>No individuals</i>																						
		LOB	LTA	MOX	MRW	MYS	MZZ	NAU	NXU	OCS	PLS	REO	RHN	RMB	RMM	RMV	RRU	RUB	SPF	SPK	SPL	SPZ	
Purse seine	<i>No samples</i>	740	328	15	6			4		2	36	8			2	36	8	2			3	2	
	<i>No individuals</i>	740	328	15	6			4		2	36	8			2	36	8	2			3	2	
Long line	<i>No samples</i>										1												
	<i>No individuals</i>										7												
Bait boat	<i>No samples</i>		25																				
	<i>No individuals</i>		0																				

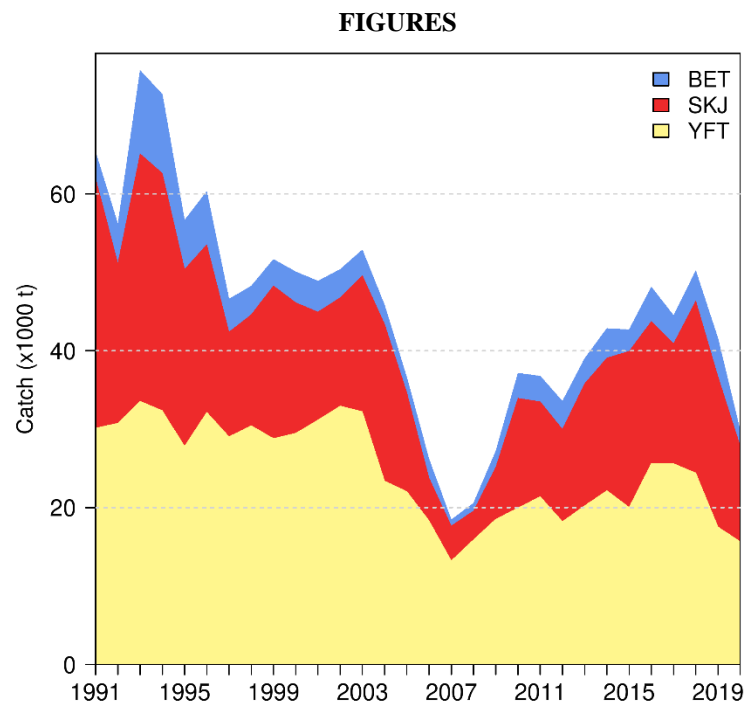


Figure 1. Total fishery production. Landings by species of the French purse seine fishing fleet during 1991-2020

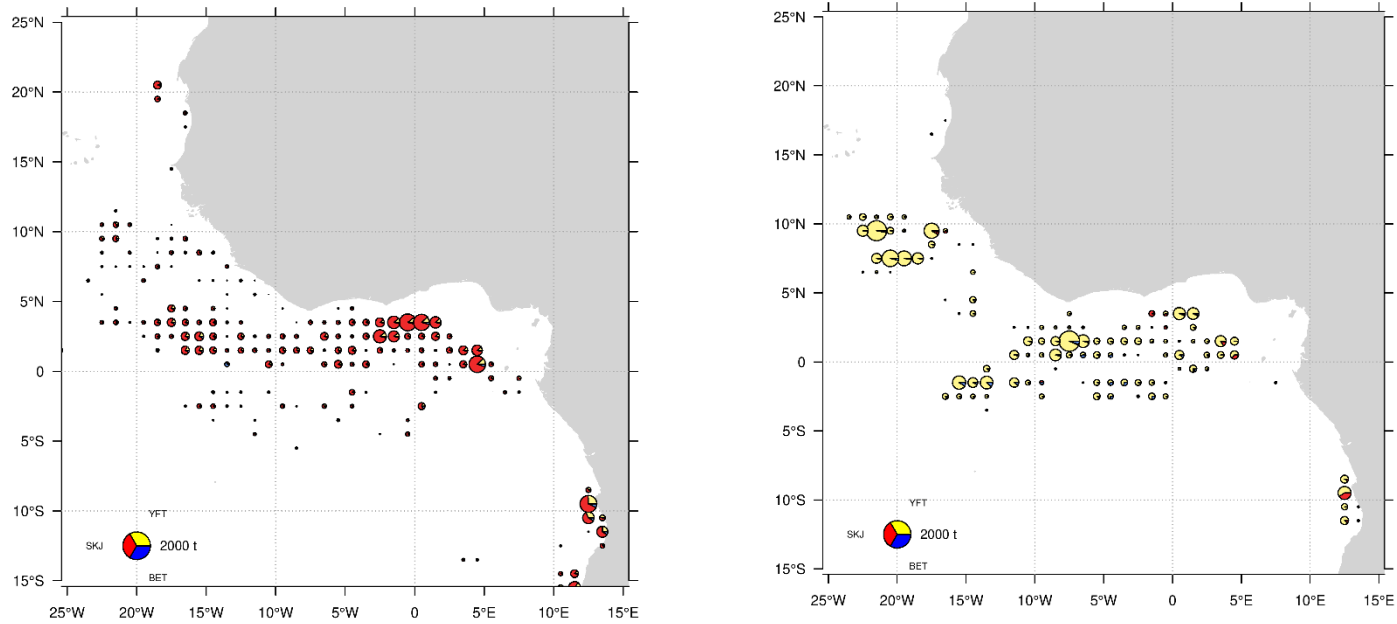


Figure 2 – Geographical distribution of specific catches (species/1° square) per fishing mode (left = FAD, right = free swimming school) for the French purse seine fleet in 2020

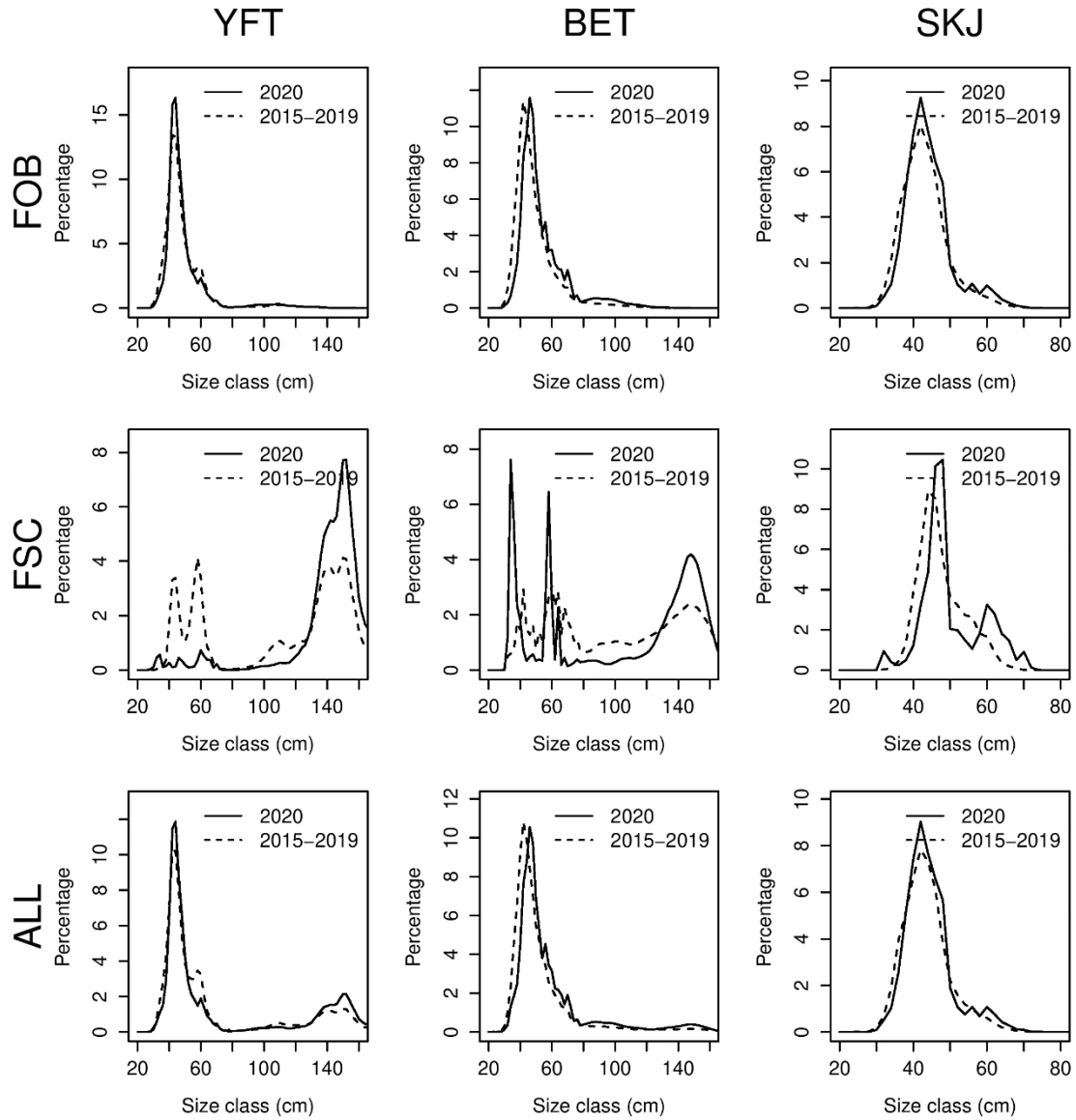


Figure 3. Distribution by size class of the catch (in percentage of the total number of fishes) for the French purse seine fleet in 2020 (solid line) and for an average year representing the period 2015-2019 (dotted line).

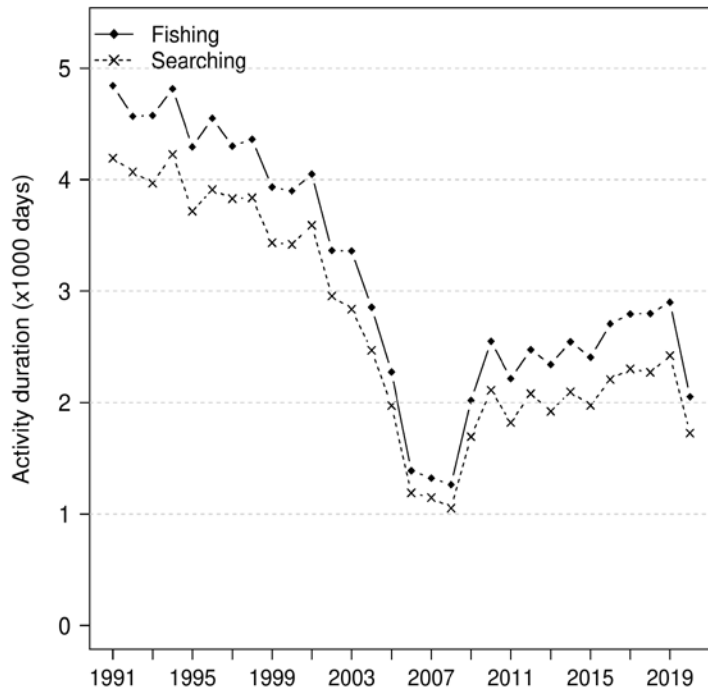


Figure 4 – Temporal series of the annual fishing days and associated searching days for the French purse seine tuna fleet in the Atlantic Ocean.

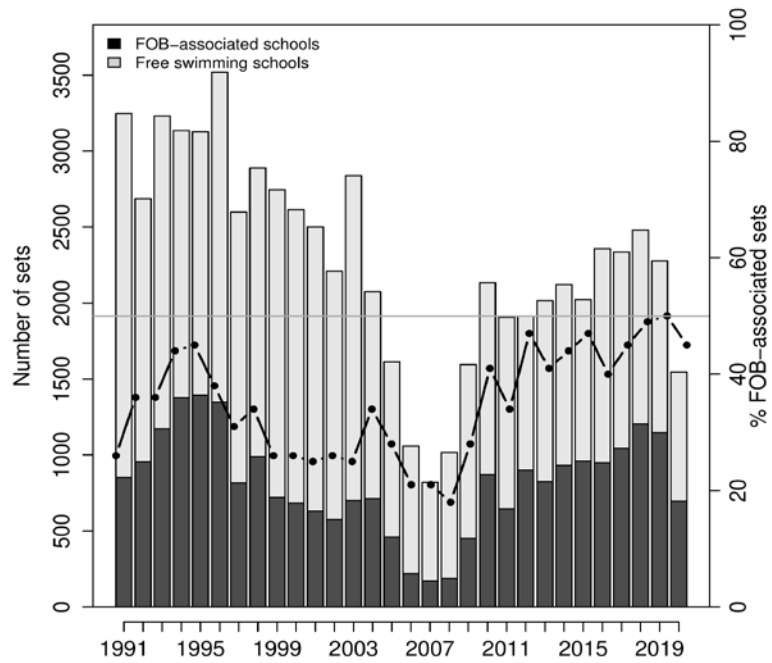


Figure 5 – Temporal series of the total number of fishing sets (positive and null) per year (bars) with the overlap of the percentage of fishing sets operated on floating objects (black line with black dots).

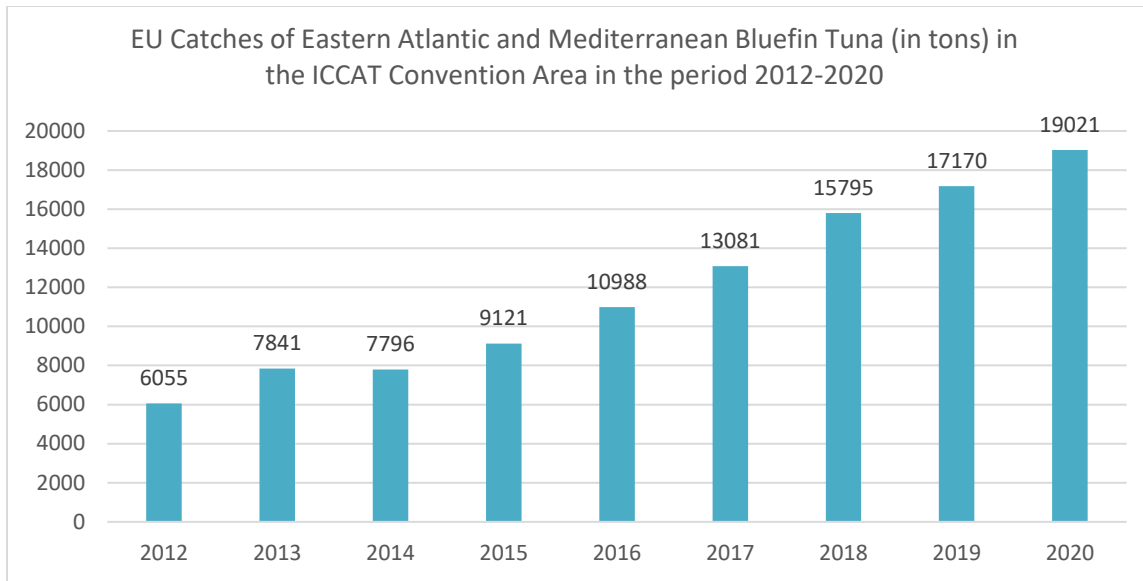


Figure 6. EU Catches of Eastern Atlantic and Mediterranean bluefin Tuna (in tons) in the ICCAT Convention Area in the period 2012-2020.

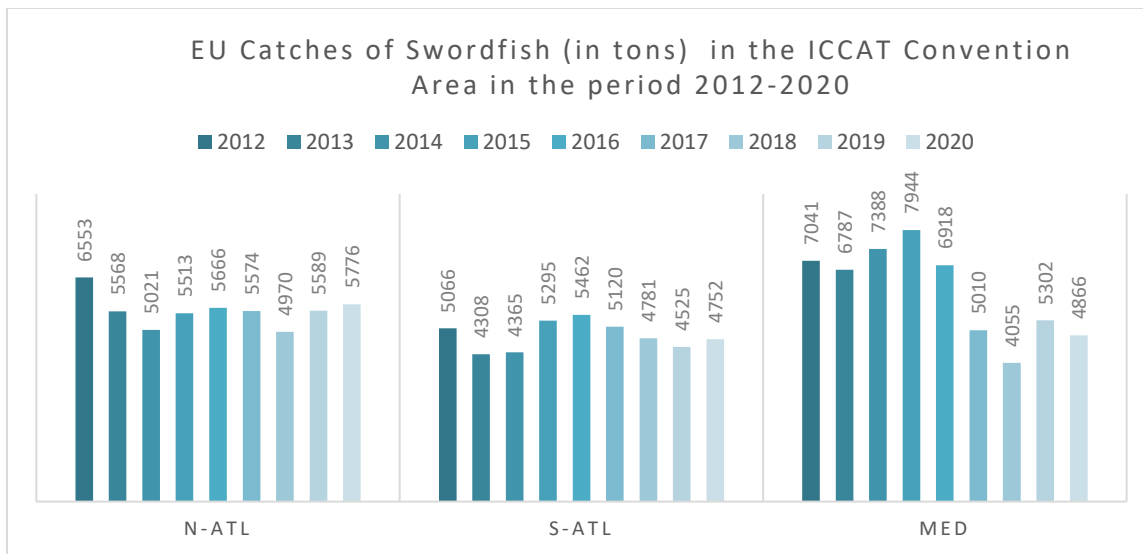


Figure 7. EU Catches of Swordfish (in tons) in the ICCAT Convention Area in the period 2012-2020

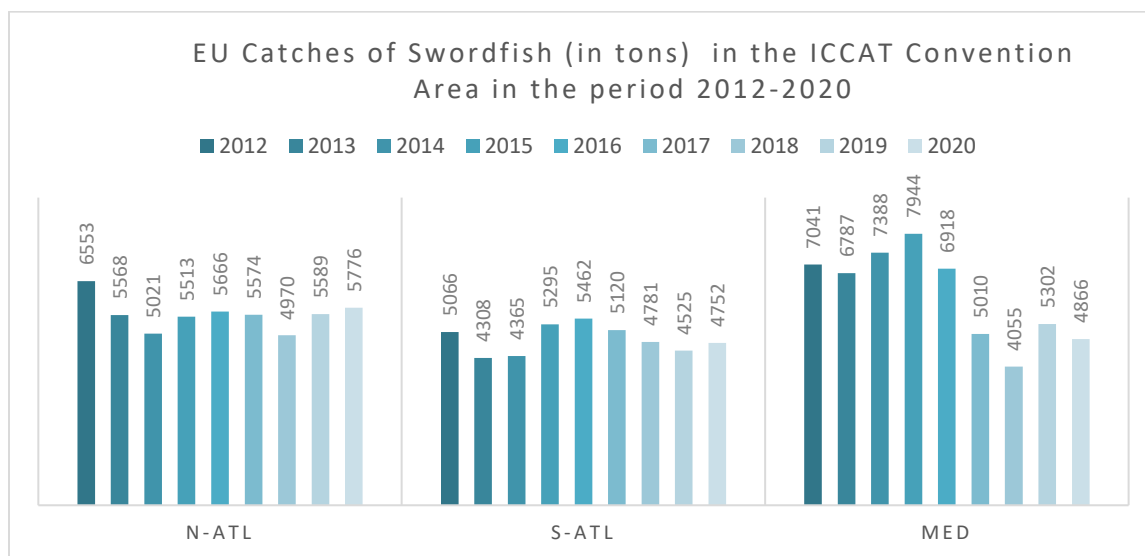


Figure 8. EU Catches of Albacore (in tons) in the ICCAT Convention Area in the period 2012-2020.

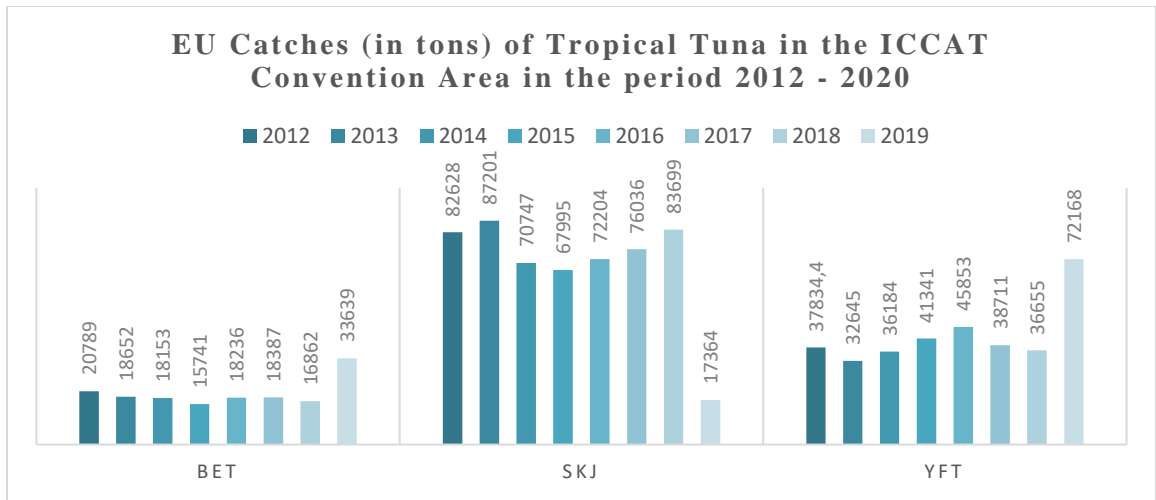


Figure 9. EU Catches (in tons) of Tropical Tuna in the ICCAT Convention Area in the period 2012 – 2020.

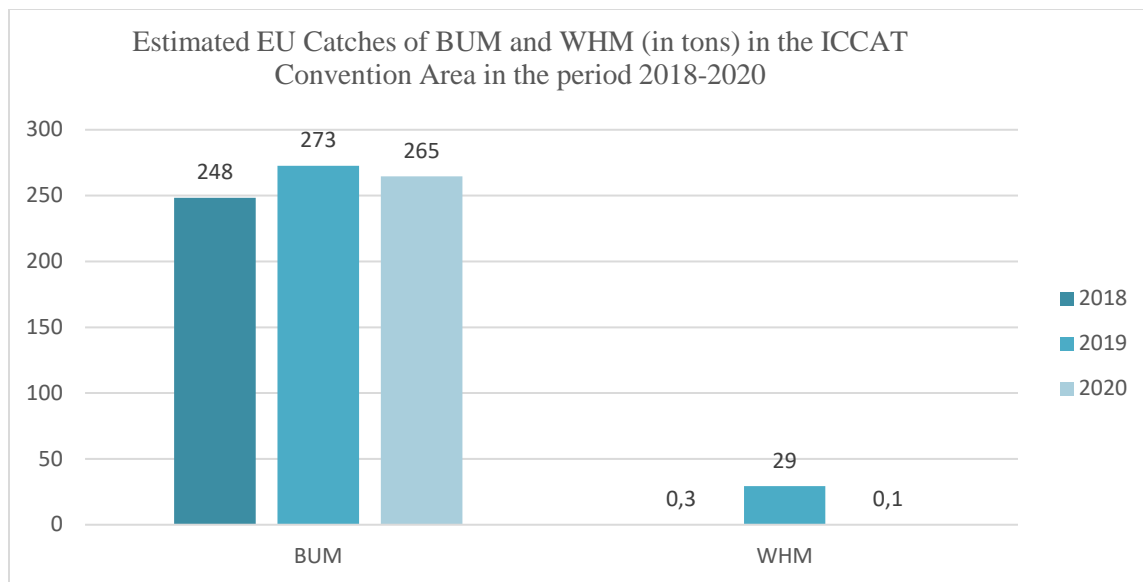


Figure 10: Estimated EU catches of BUM and WHM in the period 2018-2020

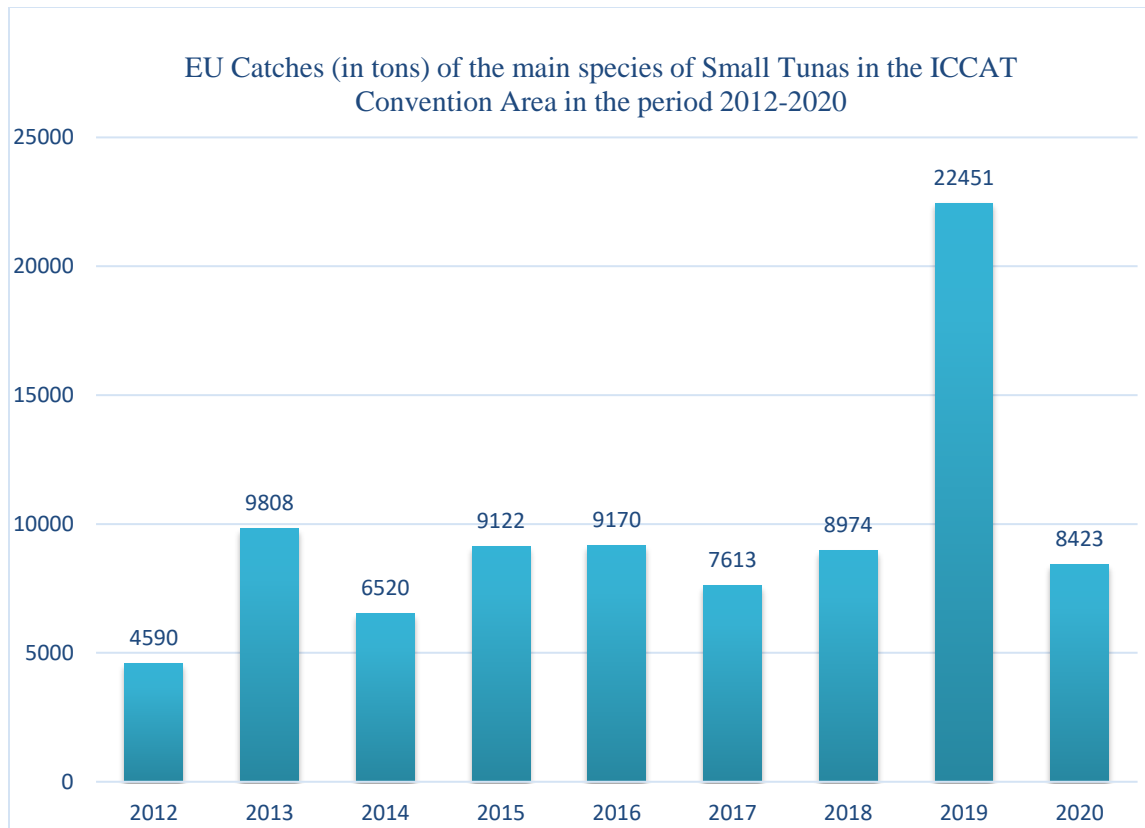


Figure 11. EU Catches (in tons) of the main species of Small Tunas in the ICCAT Convention Area in the period 2012-2020.

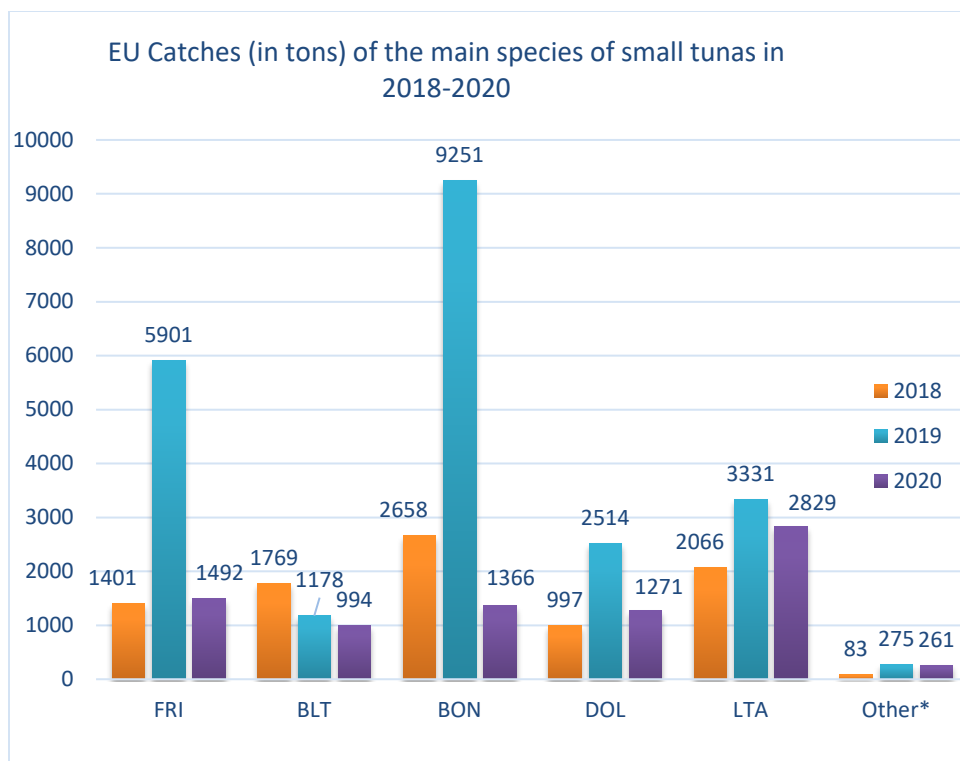


Figure 12: EU Catches (in tons) by species of Small Tunas in the ICCAT Convention Area in the period 2018-2020.

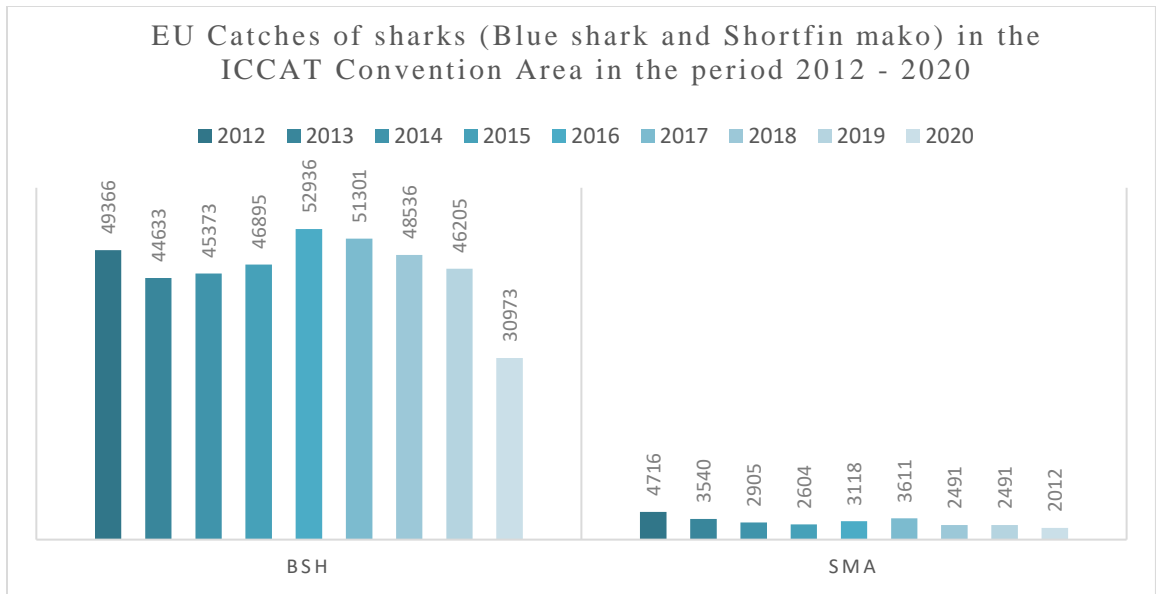


Figure 13. EU catches of sharks (in tons) in the ICCAT Convention Area in the period 2012-2020

**Annexes to Part I
Annex I**

Table 16 – Landings of major and minor tropical tuna species caught by the French tropical tuna fleets (BB and PS) operating in the Atlantic Ocean in 2020

Species	FRI	LTA	BET	SKJ	YFT	Total
BB			79,69	634,36	184,93	898,98
PS	296,00	155,50	1.956,67	12.160,64	15.681,30	30.250,11
Total	296,00	155,5	2036,37	12795,00	15866,22	31149,09
% BB			9%	71%	21%	100%
% PS	1%	1%	6%	40%	52%	100%

Table 17 – Volume of landings and species contribution for the French purse seine tropical tuna fishery in 2020 respectively to the fishing mode, free school (FSC) and floating objects (FOB)

Mod	YFT	SKJ	BET	ALB	OTH	TOTAL
FSC	13404	670	909	7	19	15010
FOB	2277	11490	1048	4	433	15251
% FSC	89,30%	4,46%	6,06%	0,05%	0,13%	100,00%
% FOB	14,93%	75,34%	6,87%	0,03%	2,84%	100,00%

Table 18 – Carrying capacity (CC = total gross tonnage weighted by months of fishing activity) of fishing vessels (purse seiners and bait-boat) of the French tropical fleet operating in the Atlantic Ocean from 2017 to 2020

Year	50-400	401-600	601-800	801-1200	1201-2000	Nb vessels	CC
2017	1	0	2	6	2	11	9907
2018	1	0	2	6	2	11	9971
2019	1	0	2	6	2	11	9946
2020	1	0	1	6	2	10	9401

Table 19 - French nominal catches for the main species regulated by ICCAT in 2020.

Species group	Species (cod.)	Stocks/Areas	Sub-total (kg)
Major tunas	Thunnus alalunga - ALB	M	14,519.73
		N	4,752,865.95
		S	10,000.00
		M	0
	Thunnus thynnus - BFT	E	5,812,119.00
		W	0
	Thunnus obesus - BET	A	2,106,431.41
	Katsuwonus pelamis- SKJ	E	12,821,842.25
		W	2,239.00
	Thunnus albacares - YFT	E	15,886,079.00
		W	1,222,054.00
	Xiphias gladius - SWO	M	110,245.89
		N	89,584.07
	Makaira nigricans- BUM	A	235,289
Tetrapturus albidus - WHM	A	115.02	
Istiophorus albicans - SAI	E	8,525.00	
	W	1,929.00	
Small tunas	Thunnus atlanticus - BLF	AT-NE	26.90
		AT-NW	15,167.09
	Euthynnus alletteratus - LTA	AT-NE	51,537.98
		AT-SE	105,422.00
		MD	6,523.55
	Sarda sarda - BON	AT-NE	61,746.75
AT-NW		0	

		MD	56,923.65
	Auxis thazard - FRI	AT-NE	52,505.20
		AT-SE	246,338.00
		MD	96.75
	Acanthocybium solandri - WAH	AT-NE	2,725.00
		AT-NW	30,783.00
		AT-SE	26,047.00
	Scomberomorus brasiliensis - BRS	AT-NW	0
	Coryphaena hippurus - DOL	AT-NE	1,576.61
		AT-NW	874,997.97
		AT-SE	10,866.00
		AT-SW	0
		MD	3,032.90
	Scomberomorus spp - KGX	AT-NE	590.60
		AT-NW	26,968.00
		AT-SW	25.71
Tuna (other sp.)	Thunnini - TUN	AT-NE	0
	Istiophoridae - BIL	AT-SE	2,049
Sharks (major sp.)	Isurus oxyrinchus - SMA	AT-NE	102.41
		AT-SE	220.00
		MD	34.42
	Prionace glauca - BSH	AT-NE	57,204.08
		AT-SE	16.00
		MD	2,329.13
Sharks (other sp.)	Cetorhinus maximus - BSK	AT-NW	15.60
	Alopias vulpinus - ALV	AT-NE	196.06
		MD	62,448.23
	Carcharhinus falciformis - FAL	AT-NE	1,722.54

	AT-SE	6,315.00
	AT-SW	48,350.00
Pteroplatytrygon violacea - PLS	AT-NE	0
	AT-SE	38.00
Lamnidae - MSK	AT-NW	81.00
Dasyatidae - STT	AT-NW	284.27
	MD	0
Sphyrna zygaena - SPZ	AT-NE	3,154.00
	AT-SE	0
Sphyrna lewini - SPL	AT-NE	3,535.00
	AT-SE	506.00
Carcharhinus longimanus - OCS	AT-NE	0
	AT-SE	167.00
Sphyrna mokarran - SPK	AT-NE	167.00
	AT-SE	0
Pteroplatytrygon violacea - PLS	AT-NE	0
	AT-SE	0
Manta birostris - RMB	AT-NE	38.00
	AT-SE	81.00
Mobula mobular - RMM	AT-NE	284.27
	AT-SE	0
Mobula tarapacana - RMT	AT-NE	0
	AT-SE	149.00
Mobulidae	AT-SE	5,401.00
TOTAL (kg)		44,857,408.99

France has issued the following number of professional fishing licenses for bluefin tuna in the Eastern Atlantic and the Mediterranean Sea in 2020:

Table 20- bluefin tuna licenses allocated and used by the French industry in 2020

	Threshold	Licences issued
Trawlers – Atlantic coast	57	49
Bait boats – Atlantic coast	8	5
Handline – Atlantic coast	47	39
Longliners – Atlantic coast	23	14
Other artisans – Exclusive trolling bait-boats – Mediterranean sea	140	46
Other artisans – Non exclusive trolling bait-boats – Mediterranean sea		14
Other artisans – Artisanal longliners – Mediterranean sea		57
Other artisans – Offshore longline vessels – Mediterranean sea		3
Purse seiners – Mediterranean Sea	22	22
Total	297	249

Table 21- EU Malta Catches (T) for the major species in the ICCAT Convention area in 2020

	BFT	SWO	ALB-MED	YFT	BET	SKJ
EU Malta	388.69	361.29	12.723	0	0	0.42

The composition of catches presents some differences compared to the previous year as presented in the table below for the following major ICCAT species:

Table 22. EU Malta Catches (T) for the major species in the ICCAT Convention area in 2018-2020

Species	2018	2019	2020	% Difference* 2019-2020
ALB-MED	103.60	77.22	12.72	-83.52%
BFT	308.16	338.28	388.68	+14.90%
SWO	307.65	406.93	361.29	-11.22%

Table 23. EU Malta Catches (t) for small tunas in the ICCAT Convention area in 2018-2020

Species	2018	2019	2020	Difference 2019-2020
BLT	12,25	12,44	6.86	-44.84%
BON	1,85	0,99	1.24	+24.75%
DOL	413,78	414,06	357.77	-13.59%
LTA	5,73	6,99	3.03	+56.62%

Table 24. EU Malta Catches (t) for sharks in the ICCAT Convention area in 2018-2020

Species	2018	2019	2020	Difference 2019-2020
BSH	2,415	1,585	2.34	+47.44%

Annex II

List of studies ended or started in 2019 concerning large pelagic stocks/fisheries under FWC EASME/EMFF/2016/008 Provision of Scientific Advice from Fisheries Beyond EU Waters

1. **EASME/EMFF/2017/1.3.2.6/SC07 - Testing designs and identify options to mitigate impacts of drifting FADs on the ecosystem (BIOFAD) (09/08/2017 – 09/12/2019)**
2.

The aim of this study is threefold: first, to test the use of specific biodegradable materials and designs for the construction of drifting FADs in natural environmental conditions; second, to identify additional options to mitigate drifting FADs impacts on the ecosystem; and third, to assess the socio-economic viability of the use of BIO FADs in the Purse Seine tropical tuna fishery.
3. **EASME/EMFF/2017/1.3.2.6/SC09 – Catch, effort and ecosystem impacts of tropical tuna fisheries - (CECOFAD II) (24/04/2018 – 24/12/2019)**
4.

This study has three specific objectives:

 1. Estimate the contribution of the new fishing technologies (implemented by the tropical tuna purse seine fisheries) to fishing mortality;
 2. Estimate the accuracy and precision of direct indices of abundance;
 3. Improve the knowledge of the environmental impact of tropical tuna fisheries and develop ecosystem management measures accounting for ecosystem considerations.
5. **EASME/EMFF/2019/1.3.2.2/SC16 - Evaluation of the effects of hooks shape/size on the catchability, yields and mortality of target and by-catch species in the surface longline fisheries of the Atlantic Ocean and adjacent seas (16/10/2019; 16/08/2020)**

6. The main aim of the study is to seek advice in order to clarify whether the use of circle hooks per se is effective in reducing mortalities of unwanted species (i.e. species protected and/or subject to release-alive policy), without negatively affecting the catch rates and yields of the targeted species and/or the economic viability of longline fisheries.
7. **RECOLAPE** project (Strengthening REgional COoperation in the area of LArge PELagic fishery data collection) EU Grant MARE/2016/22 (December 2017-July 2019)
8. RECOLAPE is aimed at strengthening the regional cooperation in the area of biological data collection for highly migratory species whose management is essentially under tuna RFMOs. The geographical scope of the study was the Mediterranean Sea and long-distance fisheries in the Atlantic and Indian Oceans (though the results might be later applied to other areas and tuna RFMOs).

Annex III

EU Member States and United Kingdom research activities at national level on issues related to ICCAT fisheries and voluntary contributions to the scientific work of international organisations

1. SPAIN

Voluntary funding for several studies and research activities was provided during 2020-2021. One of the most relevant ICCAT activities to which Spain is contributing during the last years is the Atlantic-Wide Programme for bluefin tuna (GBYP). Its main objective is improving scientific knowledge on Atlantic bluefin tuna with the aim to support conservation measures capable to ensure sustainable exploitation of the bluefin tuna stock in the Atlantic Ocean. The priorities of this programme are the improvement of the data collection, the understanding of key biological and ecological processes and the assessment models to provide better scientific advice. It includes data recovery and data mining, aerial surveys, biological studies, tagging activities and modelling. Several Spanish research laboratories are particularly active in the context of the GBYP Programme. Spain is also actively involved in other ICCAT Research Programs like Small Tuna Year Program (SMTYP) and Swordfish Year Program (SWOYP). Research on other tuna species, billfish, swordfish and sharks were also carried out (see SCRS papers). Spain is also actively participating in different activities of the Atlantic Ocean Tuna Tagging Project (AOTTP). During 2020, Spanish researchers have also contributed significantly to the development of the MSE framework for north Atlantic albacore and bluefin tuna. Spain has also contributed to the Albacore Research Program of ICCAT through its participation in the electronic (pop-up satellite) tagging activities and the collection of gonad samples for reproductive biology studies in the North Atlantic Stock.

Several research activities were developed during the 2020-2021 period. These studies contribute to the provision of scientific advice by different ICCAT Working Groups and also serve as basis for the implementation of other complementary research activities. Research activities were carried out on several tunas, billfish, swordfish and sharks (see more detailed information in SCRS papers submitted). During 2020, Spanish scientists continued the development of different lines of research, such as standardization of relative abundance rates, reproduction, feeding, growth, migrations, stock structure, larval distribution, relationship between the distribution of capture and environmental 5 parameters, in addition to the use of larval abundance indices as an indicator of spawning stock biomass and recruitment. Cooperative research work with the fishing industry is regularly undertaken by Spanish scientists on topics like the implementation of the "electronic Observer" in the purse seine fleet, the development of non-entangling and biodegradable FADs, as well as on aspects of acoustic discrimination of tunas. Moreover, research is ongoing for the reproduction of Atlantic bluefin tuna and improvement of aquaculture techniques for this species (feeding, larval ecology). Data on age, fecundity, length, sex, sexual maturity and weight have been collected for over over 200,000 tuna and tuna-like species specimens from Spanish fleets (Table 25), both target and bycatch within the Data Collection Framework. Several research projects focused on tuna and tuna-like species, as well as on several bycatch species, have continued during the biennial period 2020-2021.

Table 25: Number of fish used for the estimation of different variables from EU-Spain fleets in the ICCAT Convention Area in 2020, by species. Preliminary data.

Species/Variable	age	fecundity	length	sex ratio	Sexual maturity	weight
<i>Auxis rochei</i>	71	11	276	49	23	71
<i>Auxis thazard</i>			42			
<i>Euthynnus alleteratus</i>	70	2	225	29	68	79
<i>Katsuwonus pelamis</i>	60	0	334	8	0	61
<i>Prionace glauca</i>			159	150		12
<i>Sarda sarda</i>	32	0	1488	31	21	32
<i>Thunnus alalunga</i>	0	0	16765	0	0	1
<i>Thunnus albacares</i>			35	0	0	0
<i>Thunnus obesus</i>			206	0	0	0
<i>Thunnus thynnus</i>	78	3	8593	44	74	70
<i>Xiphias gladius</i>	90	0	6515	127	89	505

2. FRANCE

French research on tunas, tuna-like and related species is provided by:

- The **Research Institute for the Exploitation of the Sea** (Ifremer), for the fisheries of the Atlantic Ocean (North temperate zone and tropical zone) for the French Antilles (Guadeloupe, Martinique, French Guyana) and the Mediterranean Sea;
- The **Research Institute for Development** (IRD), for the fisheries of the tropical Atlantic Ocean.

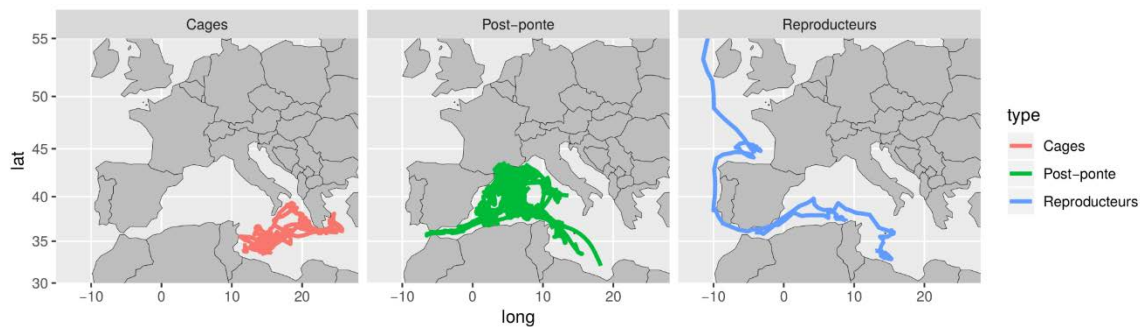
3. *Ifremer research on bluefin tuna in the Eastern Atlantic and the Mediterranean Sea*

Two main research activities are carried out by Ifremer on bluefin Tuna in the Eastern Atlantic and the Mediterranean Sea.

The first activity is the aerial survey in the Gulf of Lions. This activity has been initiated in 2000 and provides a key fisheries-independent abundance index for young bluefin tuna in the Mediterranean. This is the only index of this kind and it is therefore very valuable to ICCAT for management purpose. The index has been used for the 2017 assessment of the eastern stock. Current work focus on improving the observation through the development of a system for image acquisition and analysis, and integrating the impacts of environmental effects on the vertical and horizontal

movements of tuna and on the abundance index. A paper was published in 2020 that describes such an effect of the environment on the availability of tunas in the Gulf of Lions. The survey could also be used for marine mammals. Papers are presented every year at the SCRS.

The second activity, not independent from the first one, focuses on observing migrations of bluefin tuna in relation to its physiology. This is done through the development of a new electronic tag, embarking a sensor aiming at capturing fish growth and indirectly reproduction (POPSTAR project funded by Ifremer). The project aims also at tagging bluefin tuna caught by purse seiners. The Purse seiner fishery has been representing more than 50% of the Eastern BFT catch in the past 10 years, yet hardly any tagging has been done on this segment. A successful tagging operation was carried out from a purse-seiner in June 2018 and 2019, showing contrasting migration patterns to those obtained from fish tagged in the Northwest Mediterranean. This project is meant to be a key contribution to applied research and ICCAT, as it will help to document and understand migrations and how they are affected by the environment (e.g. for the MSE).



This project is also applied on Blue Marlin in the Indian Ocean, with a French scientist involved in IOTC. In 2019, the EMFF project (FishNchip) has been funded. This project aims at observing bluefin tuna reproduction events through the sensor developed in the project previously described. In this project deployments of electronic tags from the French purse seiners will be made in 2019 and 2020, to provide clearer information on migrations in and out the Mediterranean Sea. In June 2019, 5 tags were deployed on large tunas from a purse seiner and yielded interesting results as 3 out of the 5 tags remained attached more than 10 months, describing large migrations of bluefin. 2020 deployments were cancelled due to COVID as were the 2021 deployments. Discussions with GBYP were initiated to develop a large scale tagging experiment.

The PROMPT project has been funded by France Filière Pêche to pursue work on BFT migrations through tagging and experimental work. The tagging planned in the project aims at pursuing the work initiated by the POPSTAR and FishNchip projects described above and understand the effects of the physical environment on migrations. The experimental work will serve to estimate energetic requirement of BFT along its migrations.

A close working relationship has been set up between Ifremer, French purse seiners, scientists from a Maltese company (AquaBioTech Ltd, which has also been heavily involved in bluefin Tuna research) and a Maltese fattening farm. This has created a unique and fruitful set-up to develop research and experiments on bluefin Tuna. Ifremer has been successfully tagging fish from this fattening farm since 2017.

Regarding the aerial surveys carried out over the Gulf of Lions, Ifremer is involved in two projects (SEMMACAPE and OWFSOMM), whose goal is to improve the performance of such surveys through automatic video image recognition using Artificial Intelligence approaches. Several research activities also aim at understanding the relationship between the environmental conditions and the abundance of bluefin tuna in the Gulf of Lions (paper published in 2020), which should be included into the index through the PROMPT project.

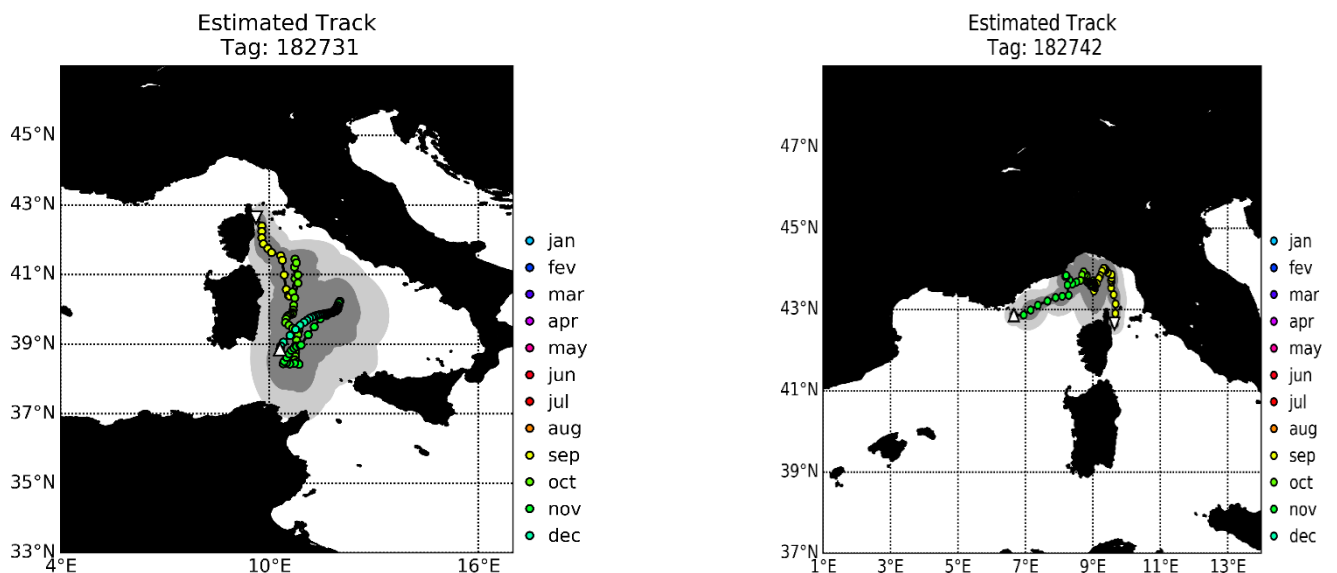
3.1. Ifremer research on Mediterranean swordfish

The Gen&Rec project (Distribution and behaviour of swordfish spawners and juveniles in the vicinity of Corsica), funded by the European Union (EMFF) and by the fishing sector (France Filère Pêche - FFP), has started in March 2019.

The purpose of the study is to increase scientific knowledge on reproductive dynamics of Mediterranean swordfish (*Xiphias gladius*) around Corsica, including the determination of the potential spawning and nursery grounds along with the movements of spawners and juveniles over a period of several months.

Reproductive activity will be assessed using macroscopic gonad characteristics, trends of gonadal indexes and sex ratio for both sexes, oocyte size-frequency distributions, microscopic investigation of oocyte development stages. Environmental DNA techniques will be used to identify potential spawning grounds. The large-scale vertical movements of juveniles and spawners will be investigated using 21 pop-up satellite archival tags (PSAT) while longlines instrumented with cameras and sensors will be used to assist characterizing behaviour of juveniles in the vicinity of the fishing gear.

In 2019, 6 swordfish were tagged with pop-up satellite tags in eastern coast of Corsica. One tag failed at transmitting data, the non-reporting rate obtained in the present work is, so far, consistent with PSAT performance estimates (Musyl et al., 2011). Tracks of two juveniles swordfish were reconstructed using data recorded respectively during 64 and 68 days. 3 individuals died, death occurred within the first few days after tagging. The post-release mortality, caused by the low resilience of swordfish to the fishing gears used, is always a limitation for successful tagging experiments on this species (Abascal, Mejuto, Quintans, García-Cortés, & Ramos-Cartelle, 2015). Tagging and eDNA sampling campaigns for 2020 have been cancelled because of the pandemics. The activity is intended to resume in 2021.



LJFL : 95 cm – Days-at-sea : 68

LJFL : 100 cm - Days at sea : 64

The first results showed that spawning occurred from June to July in the vicinity of Corsica where sex/size ratio fluctuated seasonally. Microscopic investigation of oocyte development stages has been conducted in the frame of the

Swordfish Year Program (SWOYP) of ICCAT is the reproductive biology of the three ICCAT swordfish stocks (Saber et al., 2020).

- *Abascal, F. J., Mejuto, J., Quintans, M., García-Cortés, B., & Ramos-Cartelle, A. (2015). Tracking of the broadbill swordfish, Xiphias gladius, in the central and eastern North Atlantic. Fisheries Research, 162, 20-28. doi:https://doi.org/10.1016/j.fishres.2014.09.011.*
-
- *Musyl, M. K., Domeier, M. L., Nasby-Lucas, N., Brill, R. W., McNaughton, L. M., Swimmer, J. Y., . . . Liddle, J. B. (2011). Performance of pop-up satellite archival tags. Marine Ecology Progress Series, 433, 1-U58. doi:Doi 10.3354/Meps09202.*
- *Saber, S., de Urbina, J. O., Gillespie, K., Poisson, F., Coelho, R., Rosa, D., . . . Macías, D. (2020). A Preliminary analysis of the maturity of ICCAT swordfish stocks. Collective Volume of Scientific Papers, 77(3), 537-551.*

3.2. IRD Research on tropical tunas and associated pelagic species

IRD is conducting research related to different topics on tropical tuna and associated large pelagic species. In 2020, special attention has been paid on:

- the improvement of the T3 methodology used to correct the catch by species per set reported in purse seiner logbooks from port sampling,
- to develop a robust methodology for standardizing the purse seiner CPUE by fishing mode and to provide accurate indices of abundance,
- to develop an alternate index of abundance from the acoustic signal emitted by echosounder buoys equipping the FADs,
- the analysis of potential areas at risk in terms of dFAD beaching events
- the analysis of the efficiency of the dFAD moratorium from tagging data
- the analyses of different parameters (shedding rate, reporting rate, etc.) from the AOTTP tagging data.

3.2.1. Research programs of interest for ICCAT

IRD (UMR 248 MARBEC) scientists have been participated to the following specific studies/contracts:

- La pêche thonière tropicale entre productivisme et durabilité: un métier en mutation – METMUT, Fondation de France (appel d’offre « Littoral et Mer », 2018-2021);
- Tagging programme in the frame of the Atlantic Ocean Tropical Tuna (ICCAT-AOTTP 22/2018): Tagging data analysis – Consortium CISEF (Cap Vert, Côte d’Ivoire, Sénégal, Espagne, France).

3.2.2. Students’ research

Several PhD thesis and Master Science internships are developed on the Atlantic tropical tuna fisheries in IRD (UMR MARBEC). Among others:

- *Baidai Y. (2017-2020) « Dérivation d’un indicateur indépendant de la pêche pour les thons tropicaux à partir de leur comportement agrégatif autour des Dispositifs de Concentration de Poissons » (PhD Université de Montpellier; ED GAIA)*
- *Akia S. (2018-2021) « Du global au local : étude des interactions entre les thons de la ZEE de la Cote d’Ivoire et le reste du stock de l’Atlantique Est à partir des données du programme de marquage AOTTP de l’ICCAT et de quelques indicateurs biologiques. » (PhD Université de Montpellier; ED GAIA)*
- *Imzilen T. (2018-2021) “ Modeling and analysis of the drift trajectories of fish aggregating devices (FADs) and estimation of their potential impacts in the Indian and Atlantic Oceans” (PhD Université de Montpellier; ED GAIA)*
- *Perez I. (2019-2022) « Entre durabilité de l’exploitation et conservation des écosystèmes hauturiers. Vers un aménagement spatio-temporel de la pêche à la senne du thon tropical dans l’océan Atlantique et dans l’océan Indien », (PhD Université de Montpellier; ED GAIA).*

3.3. Sharks and ray in the Mediterranean sea:

Blue sharks (*Prionace glauca*) and stingray (*Pteroplatytrygon violacea*)

The SELPAL and RéPAST programmes, funded by the fishing sector (France Filère Pêche - FFP) were designed to describe the activity of the domestic longline Blue fin tuna fishery, to assess the scale of fishery effects on the various taxa, to study ecology and explore spatial population genetic structure in the western part of the Mediterranean Sea of the blue shark (*Prionace glauca*) and stingray (*Pteroplatytrygon violacea*) and finally to propose mitigation measures to reduce impacts on elasmobranchs, sea birds and sea turtles. Genetic analyses have shown global panmixia across regional blue shark populations, with minimal evidence of regional population structure (Bailleul et al, 2018).

In the frame of these programmes, handling/release guidelines dedicated to the skippers and crew were developed to promote good handling practices to avoid injuries to the crew when handling sharks and rays and to minimize physical trauma and stress of animals in order to improve their post-release survival (Poisson et al, 2016, 2019).

The blue shark (*Prionace glauca*) is the most abundant large pelagic sharks in the Mediterranean Sea however information on its biology, ecology, and migration behavior are limited. Satellite telemetry and satellite imagery can enable the assessment of their movement pathways between ecoregions and habitat preferences in the western Mediterranean Basin. We used satellite tracking data from 26 individuals tagged in four major and separated areas in the western basin (Alboran Sea, Gulf of Lions, Ligurian Sea and Corsica island) to examine movements, home range by sex–size class and the overlap between these classes. The distribution and residency patterns of blue shark across seasons for each class were identified using a suite of available environmental data, bathymetry and reconstructed dynamic variables. A publication is in preparation, the results showed that the sharks tagged are seemingly capable of making long-range dispersals across a wide range of ecoregions. We found that there was spatial segregation between sex–size classes particularly in the summer and fall months with juveniles’ class found largely on the continental shelf and on the edge of the Gulf of Lions. The satellite tracks showed significant interchange between ecoregions. At the end of the winter, large juveniles travelled towards this particular area. For the first time in the Mediterranean, we provide first insights into seasonal migrations, exchanges between ecoregions and habitat preferences of blue sharks in the studied area. We identified the Gulf of Lions as parturition pupping and and nurse ground. We demonstrated that sharks could use major current to undergo large movements. Our results support the current Mediterranean stock boundary based on conventional tagging programs.

3.4. Research presentations and publications

Ifremer certifies the authenticity of the documents presented or published below:

- Rouyer Tristan, Bonhommeau Sylvain, Bal Guillaume, Derridj Olivier, Fromentin Jean-Marc. (2021) *The environment drives Atlantic bluefin tuna availability in the Gulf of Lions* . *Fisheries Oceanography* IN PRESS . <https://doi.org/10.1111/fog.12532>
- Rouyer Tristan, Bonhommeau Sylvain, Giordano Nicolas, Giordano François, Ellul Saviour, Ellul Giovanni, Deguara Simeon, Wendling Bertrand, Bernard Serge, Kerzerho Vincent (2020). *Tagging Atlantic bluefin tuna from a Mediterranean spawning ground using a purse seiner* . *Fisheries Research* , 226, 105522 (6p.) . *Publisher's official version* : <https://doi.org/10.1016/j.fishres.2020.105522> , *Open Access version* : <https://archimer.ifremer.fr/doc/00607/71876/>
- Rouyer T., Kimoto A., Zarrad R., Ortiz M., Palma C., Mayor C., Lauretta M., Gordo A., and Walter J. (2020). *Data and model set-up for the 2020 update stock assessment of the Eastern and Mediterranean Atlantic bluefin tuna stock*. SCRS/2020/069. Pp 325-351
- Lauretta M., Kimoto A., Hanke A., Rouyer T., Ortiz M., Palma C., Mayor C., and Walter J. *Western Atlantic bluefin tuna Virtual Population Analysis updated data inputs and model specifications*. SCRS/2020/070. 352-375
- Lauretta M., Kimoto A., Hanke A., Rouyer T., Ortiz M., and Walter J. *Western Atlantic bluefin tuna virtual population analysis base model diagnostics and results*. SCRS/2020/119. 578-605
- Lauretta M., Kimoto A., Hanke A., Rouyer T., Ortiz M., and Walter J. *Western Atlantic bluefin tuna virtual population analysis stock projections*. SCRS/2020/120. 606-615

IRD certifies the authenticity of the documents presented or published below:

4. Reports for specific contracts

- Merino G., Urtizberea A., García D., Santiago J., Murua H., Harford W., Walter Jr. J., Gaertner D. (2020) Final report of the ICCAT short-term contract: Modelling approaches - Support to ICCAT tropical tunas MSE process. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 997-1009
- Gaertner D., Guéry L., Grande M., Pascual P., Kaplan D., Santiago J., Baidai Y., Abascal F., Imzilen T., Deledda G., Diallo A., Marsac F., Orue B., Deslias C., Capello M., Katara I., Deniz S., Ramos Ma-L., Casanas Machin I., Baez J-C., Floch L., Cauquil P., Depetris M., Duparc A., Clavareau L., Merigot B., Uranga J., Merino G., Murua H., Urtizberea A., Dagorn L., Arrizabalaga H. (2019). *Catch, effort and ecosystem impacts of Tropical Tuna fisheries (CECOFAD2). Final Report. European Commission. Specific Contract No. 9 under Framework Contract No. EASME/EMFF/2016/008. pp + Annexes.*

5. Scientific documents produced during expert ICCAT meetings

- Guéry L., Deslias C., Kaplan D., Marsac F., Abascal F., Pascual P., and Gaertner D. (2020) Accounting for fishing days without set in the CPUE standardization of yellowfin tuna in free schools for the EU purse seine fleet operating in the Eastern Atlantic Ocean during the 1991-2018 period. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 294-320
- Duparc A., Aragno V., Depetris M., Floch L., Cauquil P., Lebranchu J., Gaertner D., and Bach P. (2020) Assessment of the species composition of major tropical tunas in purse seine catches: a new modelling approach for the tropical tuna treatment processing (Case of the French fleet in the Atlantic Ocean. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 951-982.
- Duparc A., Amandé J., Lesage M., Cauquil P., Gaertner D., Pascual P., and Bach P. (2020) Local market of the tropical purse seine fishery: update and perspective for its assessment in Abidjan. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 983-991
- Duparc A., Floch L., Cauquil P., Depetris M., Lebranchu J., Yala D. and Bach P. (2020). Statistics of the French Purse seine fishing fleet targeting tropical tunas in the Atlantic Ocean (1991-2019). *Collect. Vol. Sci. Pap. ICCAT*, 77 (8): 73-102.
- Duparc A., Pascual-Alayon P.J., Abascal F. and Floch L. (2020). Spatio-temporal patterns of juveniles in EU purse sein fleet catches targetting tropical tunas over the period 1990-2019. *Collect. Vol. Sci. Pap. ICCAT*, 77 (8): 103-120.
- Baidai Y., Dagorn L., Amandé M.J., Gaertner D., and Capello M. (2020) Aggregation processes of tuna under drifting fish aggregating devices (DFADs) assessed through fisher's echosounder buoy in the Atlantic Ocean. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 762-776
- Baidai Y., Dagorn L., Amandé M.J., Gaertner D., and Capello M. (2020) Mapping tuna occurrence under drifting fish aggregating devices from fisher's echosounder buoys in the Atlantic Ocean. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 777-784
- Deledda-Tramoni G., Gaertner D. (2020) Assessing the effectiveness of the current moratorium on dFADs using conventional tagging data from the AOTTP. Preliminary results. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 126-138
- Gaertner D., Goni N., Amande J., Pascual Alayon P., N'Gom F., Addi E., Conceicao I., da Silva G. B., Alves Bezerra N., Ferreira Muniz R., Niella Y., Wright S., Beare D., Ailloud L. (2020) First estimate of tag-shedding for yellowfin tuna in the Atlantic Ocean from AOTTP data. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 139-144
- Akia S., Amandé M., Gaertner D. (2020) First estimates of the reporting rate for recaptures of yellowfin, bigeye and skipjack tunas from tag-seeding experiments conducted during the AOTTP program. *Collect. Vol. Sci. Pap. ICCAT*, 76(6): 785-792
- Andonegi E., Juan-Jordá M.J., Murua H., Ruiz J., Ramos M.L., Sabarros P.S., Abascal F., Bach P., and MacKenzie B. (2020) In support of the ICCAT ecosystem report card: advances in monitoring the impacts on and the state of the "foodweb and trophic relationships" ecosystem component. *Collect. Vol. Sci. Pap. ICCAT*, 77(4): 218-229.

6. PORTUGAL

As in previous years, EU-Portugal within the European Data Collection Frame work, collected throughout 2019 fisheries data, which were used by IPMA I.P. (EU.Portugal) to conduct research activities regarding pelagic longline fisheries and the tuna trap fishery. The data collected allowed EU-Portugal to continue the development of studies on

habitat use and distributional patterns, CPUE indexes, age, growth and population genetics for highly migratory species. In addition, IPMA scientists have in recent years become increasingly involved in Ecosystem Based Fisheries Management and are starting more work focused on technical aspects of Management Strategy Evaluation.

Summarized details on work developed during 2019 are specified below:

- IPMA I.P. scientists continued to work on the standardization of catch rates (CPUEs). The main species focused in terms of CPUEs are swordfish, sharks and bluefin tuna, and updates are provided to the SCRS whenever required by the specific stock assessments are scheduled. Specifically, in 2019 IPMA updated the standardized CPUE index for bluefin tuna (jointly with Morocco).
- Within the ICCAT SRDCP Programme, IPMA I.P. scientists continue to lead 2 projects on shortfin mako, specifically a project on age and growth and a project on tagging for habitat use. Additionally, IPMA scientists are involved in the projects of genetics and post-release mortality. Papers providing updates of those works have been provided to the Sharks working group as SCRS papers.
- IPMA I.P. scientists continued to conduct in 2019 electronic satellite tagging of swordfish and sharks, aiming to improve the knowledge on migration, habitat use, stock delimitation and post-release mortality on those species.
- Within the ICCAT GBYP Programme, IPMA, I.P. scientists deployed satellite and conventional tags on bluefin tuna. Additionally, biological samples of bluefin tuna continued to be collected and shared with international SCRS colleagues, including tissues for genetics, spines and otoliths.
- IPMA, I.P., scientists are involved in the ICCAT swordfish project/consortium to collect and analysis biological samples of swordfish. This consortium is lead by DFO-Canada and IPMA is responsible for the age and growth task. Additionally, IPMA also collects and provide samples for the reproduction and population genetics.
- IPMA, I.P. scientists are part of the ICCAT project/consortium on small tunas biology. IPMA is coordinating the age and growth task and provides additional samples for the reproduction and population genetics tasks.
- One IPMA, I.P. scientist has been the Swordfish Species Group Rapporteur since 2015, and was selected vice-Chair of the SCRS since 2018.

7. GREECE

Fisheries and biological data for large pelagic species in Greece are collected through and in accordance to the EU Data Collection Framework. Biological analysis includes reproduction and growth studies.

Research activities included analysis of biological data for updating swordfish stock parameters. Specifically, biological samples (fin spines) were collected for subsequent analysis aiming to define age-length keys and update the growth parameters of the species. Additionally, samples for genetic analyses aiming to identify stock boundaries have been collected. The above actions have been carried out in the frame of the “ICCAT Swordfish Program”.

8. CYPRUS

In 2020, Cyprus was working in capacity building and preparing for producing a standardized CPUE index for the Cypriot fleet fishing for Mediterranean Albacore.

9. MALTA

As a European Member state, Malta will continue to contribute to the Atlantic-Wide Programme for bluefin Tuna (GBYP) through its data collection programme and the understanding of key biological and ecological processes. In 2020, Malta undertook sampling activities as part of the EU-wide framework for the collection of fisheries data concerning species under the competence of ICCAT targeted by its fleets. The table below presents the number of individuals of each species sampled.

Table 26. Sampling intensity (No. of individuals measured per species) in EU Malta in 2020

	BFT	SWO	BLT	DOL	LTA	MSP
No. of Individuals	819	46	46	216	32	14

Data was collected in line with Task I and II requirements (including shark species) from the following sources:

- Data collected was based on exhaustive data reported in logbooks for vessels over 10 meters length overall and through a monthly questionnaire¹ for vessels under 10 meters length overall. For bluefin tuna, total catch weights were retrieved from landing inspections carried out at each and every landing of bluefin tuna. bluefin tuna landings were all recorded as GG weight. WH weights were converted from GG weights by the following conversion factor: $GG * 1.13 = WH$.
- A multivariate questionnaire sampling survey was carried out to estimate data on landings and fishing effort relating to the artisanal fishery (< 10 meter fleet). The target population was made up of the vessels under 10 meters length overall registered in the Maltese fishing fleet register that includes full-time commercial vessels (MFA) and part-time commercial vessels (MFB). The sample was randomly selected from the fleet vessel register every quarter, with the sampling unit being the single vessel. Field recorders carried out interviews to vessel owners every week.
- Individual lengths and weights were collected from each bluefin tuna harvesting operation. Length catch composition for bluefin tuna caged into Maltese Farms was collected using Stereoscopic camera deployed at each caging operation.

10. DENMARK AND SEWDEN

For the fourth year in a row, tunas have been tagged in Skagerrak, in waters near Denmark and Sweden at the end of August and beginning of September 2020. In Skagerrak and Kattegat, 171 boats involving experienced Big Game anglers fished for up to 9 days over the period from 23 August to 20 September 2020. All the tunas were caught using rod and reel. In the western English Channel, two vessels were selected based on ability and experience. These vessels fished for 23 days between 23 August and 9 October 2020. All bluefin tuna were brought on-board the tagging boat to be tagged and sampled. All tags were deployed following ICCAT GBYP protocols. All the 171 bluefin tuna were tagged and sampled with a conventional tag from the ICCAT tagging series, and a subset of 25 were electronically tagged. The results of this programme have been transmitted to ICCAT.

11. CROATIA

National sampling program of BFT harvested from aquaculture facilities has been carried out (PUT) as well as the sampling programme within the Data Collection Framework (DCF).

In addition, a scientific research started in 2018 with a goal to investigate relation of tuna recruitment to spontaneous spawning activities of farmed bluefin tuna in the Adriatic Sea was interrupted due to a pandemic. However, it is expected to continue in the following years.

For remainder, it was presumed that tuna farms in Croatia might play a significant role in the egg production and potential recruitment of BFT in the Adriatic Sea, since they are supplied with juvenile fish (8-30 kg) and practice prolonged farming period (18 - 32 months). For this reason, farmed fish were sampled and GSI values for both sexes (females 57%, males 43%) indicated that May is the peak period of maturity followed by onset of spawning in June. Histological analysis of gonads of farmed BFT suggests that at least 60% of individuals (reaching 60 kg BW), that are carried over into the next farming year, may have potential to spawn in captivity. Barcoding of YOY tuna-like samples, incidentally catch during August in the central Adriatic, confirmed the presence of *Thunnus thynnus* individuals with average age of 46 days, suggesting possible tuna spawning in the Adriatic Sea. Results of this study highlight the fact that farmed BFT are capable of completing reproductive cycle in captivity with estimated batch fecundity of 40.5 eggs

gr-1, and that ‘escape through spawning’ phenomenon could have positive effect on recruitment of BFT in the Adriatic Sea. First results of this project were presented on the 2018 SCRS.

12. ITALY

Based on the EU legal framework for data collection and management, Italy settled up an Annual National Program for the collection of biological and economic data related to large pelagic species. The Italian Annual National Program includes also researches that have been financed during previous years by the European Commission. Main parameters collected under the “umbrella” of the aforementioned Program are: fishing effort, all biological data for the target species, the impact of by-catch for species of national interest of competence ICCAT (bluefin tuna, swordfish, albacore and bonito).

13. IRELAND

The responsibility for the support, development, collection of scientific information and fishery research activities in Ireland rests with the Marine Institute (MI). The MI provides technical and scientific expertise and advice on the development of the fishery and ensures the collection of technical and biological data, via observers, from the projects it supports. The MI also places observers on board vessels and conducts port sampling of landings in accordance with Commission regulation (EC) No 1639/2001.

13.1. Northern albacore

The MI and the Irish Sea Fisheries Board (BIM) have conducted an annual, scientific monitoring program of the northern albacore tuna fishery since Irish vessels began to exploit this species. Initially, technical and scientific data were collected from drift nets. Subsequent to the ban on driftnetting mandated by Council Regulation (EC) No 894/97, mid-water pair trawling emerged as the principal alternative fishing gear and the main focus of MI data collection protocols.

13.2. Bluefin tuna Angling Catch, Tag and Release fishery

In 2020, following an application process, 22 experienced charter skippers were authorised to operate a catch, tag and release bluefin tuna charter fishery. Anglers were permitted to participate in the fishery as paying customers onboard vessels of authorised skippers. Authorised skippers were based in ports along the Northwest, West and South coasts. A mandatory training course was developed by state agencies for participating skippers and took place online in May 2020 via video. Skippers were required to pass a short test on each module to pass the course, and a live interactive on-line session with contributions from all collaborative partners in the programme was held subsequently to answer any queries, which individual skippers may have had. The training course encompassed an introduction to ICCAT and bluefin tagging research, bluefin welfare, required angling gear and best practice, bluefin handling and tagging techniques, legislation, and data collection.

Authorisations were limited to the open season only (1st July - 12th November 2020). Due to government Covid-19 travel restrictions, the season opening was postponed to 13th July 2020. Subsequently skippers in Donegal were restricted from bringing anglers on board from the 15th of October. These restrictions were extended to all counties on the 21st of October. Skippers were still permitted to catch, tag and release bluefin tuna but without anglers on board.

Skippers were provided with standardised equipment including measuring kits, lip hooks and double-barbed tags in 2020. These tags were considered to be a more robust tag compared to the spaghetti tags used in 2019. The double-barb tag was supplied by ICCAT. All skippers were required to permit onboard installation of a vessel monitoring system (VMS) for the duration of the open season. The VMS was provided by CLS, a provider of satellite systems which support monitoring and tracking of vessels at sea. Vessel positions were monitored by the Sea Fisheries Protection Authority (SFPA) and IFI.

A total of 302 bluefin tuna fishing trips were undertaken and 685 Atlantic bluefin tuna were tagged during the open season. A further 76 tuna were hooked but not tagged, largely because they were lost before being brought alongside. On 12 occasions, tuna were brought alongside and measured but the fish could not be tagged for technical reasons. No other species were caught as by-catch. Zero mortalities were recorded in 2020. Higher levels of catches were recorded in 2020 compared to 2019. Fishing effort increased by 50% despite the lack of international tourism while the number of bluefin tuna tagged increased by 228%. The Northwest continued to dominate catches with the highest number of fish tagged during the season. The south coast reported the highest rate of change in numbers tagged, from 3 in 2019 to 170 in 2020. Notably, bluefin tuna were found within close proximity of the coast, as has been recorded consistently in Donegal Bay since the programme started. Along the west coast few sightings were reported and in combination with low fishing effort, only three bluefin tuna were tagged in 2020. Reports from skippers at that time suggest that bluefin tuna were transient in the area in 2020, with few observations of large schools remaining in one location for extended periods of time. In 2020, as in 2019, a storm in October affected on fishing effort and on the number of bluefin tuna tagged at that time.

Skippers submitted a digital report of their bluefin angling trips on ruggedised tablets and were obliged to submit their surveys digitally within 24 hours of their angling trip. Paper copies of the trip and fish information were also recorded by skippers and collected at the end of the open season. Fields in the digital and paper forms were designed to correspond to fields in the ICCAT conventional tagging document.

Digital and paper records were reviewed and a summary of data was emailed back to each skipper for quality assurance throughout the season. Telephone calls were made with all authorised skippers for updates on three separate occasions: during the pilot programme (9th of September and 13th of October) and after the programme (14th of November 2020). Data collected from the programme was subsequently cross-checked using both the physical report and digital report once the programme has finished for the season. The quality assured data was then collated and submitted to ICCAT in the form of the conventional tagging report (TG02-CnvTReRc). The tagging data forwarded to ICCAT is processed regularly and included in the tagging database according to the relevant Species Group needs (in this case the ABFT) and is updated every year. A summary of these data is published and made publicly available at <https://www.iccat.int/en/accesingdb.html> under the “Tagging” toggle.

In addition, eleven observer days took place during the 2020 Tuna CHART programme and these were focussed on skippers new to the programme.

13.3. Progress on the collaborative bluefin tuna research project in Ireland 2020

Since October 2016, the Marine Institute in collaboration with ICCAT, Stanford University and Irish universities have been involved in a satellite/accelerometer tagging program off the County Donegal coast initially, but extending the tagging programme to the South coast in 2020. This program aims at better understanding the spatial structure of the bluefin tuna stock to provide direct inputs to ICCAT assessments to improve management.

In 2020, the Marine Institute submitted an Expression of Interest to participate in GBYP Phase 10 e-tagging programme in collaboration with Dr. Barbara Block’s team of Stanford University, for Area B of the Atlantic Wide Research programme for bluefin Tuna (GBYP). This EoI was positively evaluated by the GBYP Steering Committee. The Marine Institute were awarded 17 LOTEK satellite tags.

Satellite tagging of Atlantic bluefin tuna was successfully carried out between August and November 2020 with 27 individuals tagged and released with either Wildlife Computers, pop-off satellite archival tags or Lotek PSATGEO pop-off archival tags (in conjunction with number coded floy (spaghetti) tags). All tagging was carried out under a project licence from the Irish Health Products Regulating Authority (HPRA) with licenced and trained personnel. A Research Mortality Allowance (RMA) was obtained from ICCAT who also supplied ICCAT coded floy tags for identification of fish if recaptured at a later stage.

The Irish Sea Fisheries Protection Agency (SFPA) were made aware of the programme and identities of the participating vessels, skippers and scientific personnel and a derogation was obtained for scientific research fishing for a specified area and period. An Invitation to Tender for the Supply of a Commercial Vessel to tag bluefin Tuna off the Coast of Ireland for the Marine Institute was issued in June 2020. ICCAT’s Electronic Tagging Record Table (TG03-EleTReRc_Ireland_BFT_2020) containing all the electronic tagging information for the 2020 tagging campaign was provided previously.

Since 2016, 88 fish have been tagged with electronic satellite tags and 8 with accelerometer tags. More fish will be tagged in 2021 under a similar MOU with ICCAT as in 2020. Migration data from the tags will allow to check for potential spatial stock segregation.

14. UNITED KINGDOM

In recent years, Cefas have conducted research projects on porbeagle shark *Lamna nasus*, including electronic tagging, biological parameters (from dead bycatch) and contaminant levels. Recent publications on this include:

- Nicolaus, E. E. M., Bendall, V. A., Bolam, T. P. C., Maes, T. and Ellis, J. R. (2016). Concentrations of mercury and other trace elements in porbeagle shark *Lamna nasus*. *Marine Pollution Bulletin*, 112: 399–405.
- Bendall, V. A., Barber, J. L., Papachlitzou, A., Bolam, T., Warford, L., Hetherington, S. J., Silva, J. F., McCully, S. R., Losada, S., Maes, T., Ellis, J. R. and Law, R. J. (2014). Organohalogen contaminants and trace metals in North-East Atlantic porbeagle shark (*Lamna nasus*). *Marine Pollution Bulletin*, 85: 280–286.
- Biais, G., Coupeau, Y., Séret, B., Calmettes, B., Lopez, R., Hetherington, S. and Righton, D. (2017). Return migration patterns of porbeagle shark (*Lamna nasus*) in the Northeast Atlantic: implications for stock range and structure. *ICES Journal of Marine Science*, 74: 1268–1276.

Cefas staff have co-authored papers on mitigation measures and reviewed capture and post-release mortality of elasmobranchs:

- Ellis, J. R., McCully Phillips, S. R. and Poisson, F. (2017). A review of capture and post-release mortality of elasmobranchs. *Journal of Fish Biology*, 90: 653–722.

- *Poisson, F., Crespo, F. A., Ellis, J. R., Chavance, P., Bach, P., Santos, M. N., Séret, B., Korta, M., Coelho, R., Ariz, J. and Murua, H. (2016). Technical mitigation measures for sharks and rays in tuna and tuna-like fisheries: turning possibility into reality. Aquatic Living Resources, 29 (402): 32 pp.*

Cefas staff contributed to a recently-completed EU project on oceanic sharks

- *Coelho, R., Apostolaki, P., Bach, P., Brunel, T., Davies, T., Díez, G., Ellis, J., Escalle, L., Lopez, J., Merino, G., Mitchell, R., Macias, D., Murua, H., Overzee, H., Poos, J.J., Richardson, H., Rosa, D., Sánchez, S., Santos, C., Séret, B., Urbina, J. O., & Walker, N. (2019). Improving scientific advice for the conservation and management of oceanic sharks and rays. Final Report, Specific Contract No 1, Framework Contract EASME/EMFF/2016/008.*

There are ongoing analyses on electronic tagging data for porbeagle, but this paper has not yet been finalised.

Cefas staff are currently involved with several projects on tuna in the ICCAT area:

Thunnus UK: The University of Exeter and Cefas have been collaborating on the "THUNNUS UK" project since late 2017, supported by the Department for Food, Environment and Rural Affairs (Defra) and the European Maritime and Fisheries Fund (EMFF). The project is in collaboration with the Tuna Research and Conservation Center of Stanford University, to provide a baseline understanding of the ecology and distribution of Atlantic bluefin tuna that migrate to waters of southwest England. In response to a call from ICCAT, Cefas and the University of Exeter agreed to deploy pop-up satellite tags on bluefin tuna on behalf of the GBYP in 2020 and in 2021. Cefas attended the ICCAT GBYP close kin mark recapture workshop in February 2021, and Cefas/Exeter attended the ICCAT GBYP bluefin tuna tagging workshop in May 2021.

This project has supported the publication of the following peer-reviewed papers:

- *Horton, T.W., Block, B.A., Drumm, A., Hawkes, L.A., O’Cuaig, M., O’Maoile’idigh, N., O’Neill, R., Schallert, R.J., Stokesbury, M.J.W., & Witt, M.J. (2020). Tracking Atlantic bluefin tuna from foraging grounds off the west coast of Ireland. ICES Journal of Marine Science (2020), doi:10.1093/icesjms/fsaa090*
- *Horton, T.W., Block, B.A., Davies, R., Hawkes, L.A., Jones, D., Jones, H., Leeves, K., O’Maoile’idigh, N., Righton, D., van der Kooij, J., Wall, D. & Witt, M.J. 2021. Evidence of increased occurrence of Atlantic bluefin tuna in territorial waters of the United Kingdom and Ireland. – ICES Journal of Marine Science, <https://doi.org/10.1093/icesjms/fsab039>*

CHART: In 2021, the CHART (CatCh And Release Tagging) pilot programme in England for Atlantic bluefin tuna was designed and implemented. The programme operates in accordance with the provisions in Paragraph 45 of ICCAT regulation 19-04 for tag and release programmes, and in keeping with the UK Bluefin Tuna fishing plan agreed with ICCAT in March 2021. There are 15 vessels licensed to recreationally fish for Atlantic bluefin tuna who have been trained and signed off as competent to assess fish condition and tag with ICCAT dart tags, contributing to the large-scale tagging under the ICCAT GBYP Programme. The vessels also collect data on tuna size, behaviour, sightings and environmental data, feeding into improving our understanding of the distribution, frequency, demographics and movements of the Atlantic bluefin tuna off the south and southwest coast of England. The programme runs from 16th August to 14th November and will be followed by an evaluation phase.

AOTTP: St Helena (UK Overseas Territory) took part in the ICCAT funded Atlantic Ocean Tropical Tuna Tagging Programme (AOTTP). The St Helena component of the AOTTP was a collaboration between St Helena Government and Cefas with an aim to contribute to understanding of the movement, growth and habitat use of pelagic species. A detailed summary of tagging activities by the UKOTs were included in the UKOT annual report.

Annex IV

Participation and contributions to SCRS Working Groups

Researchers from EU-Spain regularly participate in all ICCAT initiatives and carry out on a permanent basis studies on the biology and ecology of the species managed by ICCAT. They also regular contribute to the stocks assessments and other issues (e.g., ecological issues, management strategy evaluation, etc...)

EU-Spain scientists have participated in most of SCRS working groups.

In 2020, IRD (EU-France) participated in the Species Group meetings and the intersessional meeting for tropical tunas.

In 2020, Dr. Tristan Rouyer attended the Species Group meetings and the intersessional meeting for bluefin tuna and Mediterranean swordfish. Dr. François Poisson participated in the swordfish sampling working group.

During the 2019 SCRS BFT WG, outcomes of the analysis of the PS fleet activity over the period 2015-2019 was presented. The paper was presented under the title Review of the Croatian purse seine bluefin tuna fisheries - catch rates and specificities in the recent years (2015-2019) (SCRS/2019/186).

Majority of vessels of Croatian BFT PS fleet falls in the category PS 24-40m. Juvenile BFT school dispersion of different age groups are the main reason for the uniqueness of Croatian tuna fishing, which is recognized by small individual catches and multitude of fishing operations. This characteristic considerably affects the fleet behaviour which differs from year to year. Adverse weather conditions coupled with accumulation of relatively small catches are the main reason for slow quota uptake. Presented data indicate that past increase of capacity was well balanced with available opportunities, but still highly dependent on aggregation patterns of BFT. These specificities support the need to align the fishing capacity with the fishing opportunities in such a way so as to reflect the realities present in the area.

The analysis demonstrated that catch rates as they currently are, fit the realities of the PS BFT fishery in the Adriatic and no changes with respect to this issue would be justified.

Researchers from EU-Italy contribute to the following meetings and SCRS Working Groups:

- Intersessional Meeting of the Swordfish Species Group - Madrid 25/28 February 2019
 - *SCRS/2019/025 Length-weight relationship, monthly size distributions of length and weight for swordfish (Xiphias gladius L.) caught by longliners in the Tyrrhenian Sea. Pignalosa P., Pappalardo L., Gioacchini G., and Carnevali O.*
 - *SCRS/2019/026 Length-weight relationships and size distributions of Mediterranean swordfish (Xiphias gladius L.) caught by longliners in the Mediterranean Sea. Pignalosa P., Pappalardo L., Gioacchini G., and Carnevali O.*
 - *SCRS/2019/027 Females reproductive biology of Mediterranean swordfish (Xiphias gladius L.): New insights from a multidisciplinary study. Gioacchini G., Pappalardo L., Pignalosa P., and Carnevali O.*
 - Regional Coordination Group Large Pelagics (RCM.LG) 2019 - Madrid 13/14 May 2019
 - ICCAT Meeting - Workshop on Swordfish biology - Faro 18/21 June 2019
 - SCRS Species Group Meeting - Madrid 23/27 September 2019
 - *SCRS/2019/0142 Length-weight relationships and a new length conversion factor for Atlantic bluefin tuna (Thunnus thynnus L.), caught in the Mediterranean Sea. Pignalosa P., Pappalardo L., Gioacchini G., and Carnevali O.*
 - *SCRS/2019/0143 Length-weight relationships and a new conversion factor for Mediterranean swordfish (Xiphias gladius L.) caught by longliners in the Mediterranean Sea. Pignalosa P., Pappalardo L., Gioacchini G., and Carnevali O.*
 - *SCRS/2019/0168 LThe challenge to assign maturity stages: development of a histology-validated macroscopic criteria based on the GSI. Marisaldi, D. Basili, M. Candelma, V. Sesani, P. Pignalosa, G. Gioacchini and Carnevali O.*
 - Plenary Meeting of the Standing Committee of Research and Statistics SCRS - Madrid 01/05 October 2019
- Malta participated in the SCRS species group meetings and meeting of the SCRS in 2019.
Greek fishery scientists, have participated in the Species Group meetings and the ICCAT SCRS Plenary session.
During 2020, IPMA scientists (EU-Portugal) contributed to the work in the following groups:

IPMA contributes regularly with data and analysis for ongoing analysis prioritized by the Shark Species Group. The following updates and SCRS contributions to the Sharks Species Group have been provided in 2020, with participation from IPMA:

- Cortés, E., Bowlby, H., Carlson, J., Coelho, R., Domingo, A., Forselledo, R., Jagger, C., Mas, F., Parker, D., Santos, C.C., Semba, Y., Taylor, N., Zhang, X. 2020. Preliminary sustainability assessment for fishing effects (SAFE) of pelagic longline fisheries on porbeagle sharks and identification of F based biological reference points. Atlantic porbeagle stock assessment meeting, 15-22 June, Online Meeting. ICCAT-SCRS Document, SCRS/2020/099.
- Nohara, K., Takeshima, H., Noda, S., Yanada, R., Coelho, R., Santos, M.N., Cortés, E., Domingo, A., Urbina J.O., Semba Y. 2020. Genetic population structure of Atlantic Ocean shortfin mako by using mitogenomics and nuclear-genome-wide single-nucleotide polymorphism genotyping. ICCAT-SCRS Document, SCRS/2020/132.
- Santos, C.C., Forselledo, R., Mas, F., Cortés, E., Carlson, J., Bowlby, H., Semba, Y., Kerwath, S., da Silva, C., Parker, D., Jagger, C., Rosa, R., Domingo, A., Coelho, R. 2020. Size distribution of porbeagle shark in the North and South Atlantic using data from observer programs. Atlantic porbeagle stock assessment meeting, 15-22 June, Online Meeting. ICCAT-SCRS Document, SCRS/2020/097. 14pp

IPMA continues to participate in the Small Tunas SMTYP and is responsible for the age and growth component. The following updates with contributions from IPMA have been presented to the Small Tuna Species group during 2020:

- Ollé, J., Hajjej, G., Macias, D., Saber, S., Lino, P. G., Muñoz-Lechuga, R., Pascual Alayón, P. J., Angueko, D., Ngom Sow, F., Diaha, N'G. C., Lucena Frédou, F. & Viñas, J. 2020. Deep genetic differentiation in the little tunny from the Mediterranean and East Atlantic. *Collect. Vol. Sci. Pap. ICCAT*, 77(9), 13-19.
- Saber S., Muñoz-Lechuga R., Macias D., Ortiz de Urbina J., Lino P.G., Diaha N'G.C., Pascual P., Ngom Sow, F., Angueko, D., Hajjej, G., Baibbat, S.A., Benounnas, K., Quelle P., Medina A., Silva G., Viñas J., Lucena-Frédou F. 2020. Report of the 2020 ICCAT workshop on small tunas biology studies for growth and reproduction. *Collect. Vol. Sci. Pap. ICCAT*, 77(9): 100-111.
- Viñas, J., Ollé, J., Hajjej, G., Macias, D., Saber, S., Lino, P. G., Muñoz-Lechuga, R., Baibbat, S. A., Habibe, B. M., Ngom Sow, F., Diaha, N'G. C. & Frédou, F. L. 2020. Population genetic of atlantic bonito in the north east Atlantic and Mediterranean. *Collect. Vol. Sci. Pap. ICCAT*, 77(9), 6-12.
- Viñas, J., Ollé, J., Hajjej, G., Macias, D., Saber, S., Pascual-Alayón, P. J., Lino, P. G., Muñoz-Lechuga, R., Baibbat, S. A., Habibe, B. M., Ngom Sow, F., Diaha, N'G. C., Angueko, D., Silva, G. & Frédou, F. L. 2020. Final report of the short-term contract for ICCAT SMTYP for the biological samples collection for growth, maturity and genetics studies-year# 2. *Collect. Vol. Sci. Pap. ICCAT*, 77(9), 20-33.

The following updates have been provided to the Swordfish Species group with contributions from IPMA in 2020:

- Gillespie, K., Hanke, A., Coelho, R., Rosa, D., Carnevali, O., Gioacchini, G., Saber, S. 2020. Final report for phase two of the ICCAT short-term contract: swordfish biological samples collection for growth, reproduction and genetic studies. *Intersessional meeting of the swordfish species group, 16-19 March 2020, Online Meeting. Collect. Vol. Sci. Pap. ICCAT*, 77(3): 136-161.
- Rosa, D., Gillespie, K., Garibaldi, F., Cardoso, L.G., Schirripa, M., Hanke, A., Coelho, R., 2020. Progress of the age and growth component of the swordfish biology project. *Intersessional meeting of the swordfish species group, 16-19 March 2020, Online Meeting. Collect. Vol. Sci. Pap. ICCAT*, 77(3): 122-135.
- Rosa, D., Santos, C.C., Macias, D., Ortiz de Urbina, J., Forselledo, R., Miller, P., Domingo, A., Coelho, R., 2020. Brief update on the satellite tagging of Atlantic swordfish. *Intersessional meeting of the swordfish species group, 16-19 March 2020, Online Meeting. Collect. Vol. Sci. Pap. ICCAT*, 77 (3): 113-121.
- Saber, S., Ortiz de Urbina, J., Gillespie, K., Poisson, F., Coelho, R., Rosa, D., Ángel Puerto, M., Macías, D. A preliminary analysis of the maturity of ICCAT swordfish stocks. *ICCAT species groups meetings (tropical tunas), 31 August, Online Meeting. ICCAT-SCRS Document, SCRS/2020/135. 14pp.*

IPMA coordinates the ageing component and provides samples from genetics of marlins and sailfish under the ICCAT Enhanced Program for Billfish Research - EPBR. All data have been sent to the billfishes Working Group coordinator to contribute to the ongoing studies.

Scientist from Cyprus participated in the following groups:

- ICCAT Intersessional meeting of the swordfish tuna Species group.
- ICCAT Mediterranean swordfish Assessment
- ICCAT Atlantic Albacore Stock Assessment (Session on Mediterranean Albacore)

Scientist from Italy participated in the following groups:

- Intersessional Meeting of the Swordfish Species Group - Online 16/19 March 2020
- Swordfish MSE Technical Meeting – Online 4/5 June 2020
- Regional Coordination Group Large Pelagics (RCM.LG) 2020 - Online 25/26 June 2020

- Regional Coordination Group Long Distance Fisheries (RCM.LDF) 2020 - Online 13/15 July 2020
 - SCRS species Group Meetings (SWO) – Online 31 August 2020
 - SCRS species Group Meetings (BFT) – Online 3 September 2020
 - SCRS species Group Meetings (SC-STATS) – Online 4 September 2020
 - 3rd Intersessional Meeting of the ICCAT bluefin tuna Species Group – Online 1/3 December 2020
- Italy provided the following SCRS contributions:
- *SCRS/2020/xxx Size frequency distribution analysis of Mediterranean Swordfish (Xiphias gladius L.) caught by Italian and Maltese longline fleets operating in the Mediterranean sea. Pappalardo L., Coco O., Firmamento R., Raffa A., Pignalosa P.*
 - *SCRS/2020/xxx Size frequency distribution analysis of Atlantic bluefin tuna (Thunnus thynnus L.) caught by Italian fishing fleets operating in the Mediterranean sea. Pappalardo L., Coco O., Firmamento R., Raffa A., Pignalosa P.*
Greek fishery scientists from the Hellenic Centre for Marine Research (HCMR) have participated in various ICCAT working groups (species groups, assessment and intersessional meetings). They contributed in SCRS documents and report preparation. A Greek scientist (Dr. G. Tserpes) is coordinating the Mediterranean Swordfish Group. Due to a COVID-19 pandemic there were no contribution from the Croatian experts to the SCRS WG in 2020. Malta will continue to contribute to the Atlantic-Wide Programme for bluefin Tuna (GBYP) through its data collection programmes and the understanding of key biological and ecological processes.

Annex V

Scientific Observers Programmes

1. SPAIN AND FRANCE

Spain is continuing observer programs in different fleets operating in the ICCAT Convention Area. The Spanish scientific observers cover the main fisheries in combination with other sources of information. These observers follow appropriate training courses and the data are consolidated into the national databases after a data validation process. The information collected concerns all target and not-target species and, where possible, the collection of data is extended to cover marine turtles, seabirds and marine mammals. The type of data collected refer to catch, discards, by-catch, vessels and fishing gear characteristics as well as biological parameters such as length, weight, sex, maturity and growth. The on-shore and the at-sea sampling programs coordinated by the IEO were suspended in most of 2020, due notably to administrative problems and to covid-19. This affected all stocks.

Observers on board French vessels are equipped with the species identification cards developed by ICCAT or others tuna regional fisheries management organizations (tRFMOs). They have instruction in their sampling protocol to produce an exhaustive list of species caught per fishing operation at the better specific resolution possible. All are equipped with a digital camera for rare specimens for identification purposes at the end of the trip. All pictures have a code to reaffix the individual to its fishing operation. During the training course observer is trained on sampling methods allowing to estimate the total amount of bycatch and discards at the level of the fishing operation. Methods are explained in the observer manual given during the training course.

The sampling design set for French purse seiners fishing tropical tuna follows the recommendations developed in the regional observer scheme of ICCAT. This sampling design is documented in the observer manual updated every year at the UE level. Data quality is taken into account. After each observer trip, a debriefing of the cruise is organized between the observer and two scientists involved in the coordination of the observer program. This debriefing will permit to attribute a score to the quality of data collected.

In the case of Spain and France observer data are stored in the Observe database shared between France and Spain for the purse seine fishery. The development of the software achieved by IRD is discussed every year during the Observer meeting organized between Spain, France and some partner institutes from coastal countries. Currently the quality of data stored in the Observe database is controlled for the position of fishing operation deployed (and for the deployment of FADs for the Purse seine fishery) by crosschecking latitude and longitude data in the database with VMS data. The development of a tool aiming to enlarge the number of variables controlled is ongoing.

French purse seine observer program coverage in 2020: The part of the human observer program on purse seiner funded by EU in the frame of the data collection framework (DCF) reached a coverage of 13.48% of the fishing trips, 16.15 % of the days at sea and 20.75 % of the fishing sets. If we consider the observations collected in the frame of the ICCAT moratoria, and the scientific observer program supported by the industry (OCUP project supported by Orthongel) the total coverage of scientific observer programs reached 94.18% of the days at sea and 97.61% of the fishing sets (table 27).

Data collection by the purse seine observer program (EU program and ICCAT moratoria and OCUP Orthongel): Scientific observers monitor discards of both target species (tunas) as priority and second bycatch. Observations consist in counting, species composition, length measurements (and weighting when possible). The observer handles all the discards, and when not possible, a fraction of it that is raised at the level of the fishing set. In such case, discarded fish are randomly sampled to be counted and measured. When possible the condition (dead or alive) of discarded fish is monitored.

Table 27 – Observer coverage of the fishing activity for the French purse seine fleet for the three ongoing observer programs: EU DCF, ICCAT Moratoria and Orthongel OCUP

2020	Trips		Days at sea		Fishing sets	
	Number	Coverage	Number	Coverage	Number	Coverage
Logbook	89		2750		1547	
Observations DCF	12	13,48%	444	16,15%	321	20,75%

Observations Moratoria	18	20,22%	585	21,27%	383	24,76%
Observations Orthongel	47	52,81%	1561	56,76%	806	52,10%
Total Observations	77	86,52%	2590	94,18%	1510	97,61%

Table 28 – Inventory of species recovered as incidental catch for the French purse seine fishery in the Atlantic kept on board or discarded with the % of survival individuals discarded

Species group	ON BOARD		DISCARDS	
	Catch (kg)	N	N discarded	% alive
Billfishes	25248	411	54	0%
Cetaceans	0	0	4	100%
Other bony fishes	255614	217626	126180	53%
Rays	0	0	174	79%
Sharks	106	10	1617	50%
Tunas nei	0	0	25101	0%
Turtles	0	0	129	100%
Whale shark	0	0	2	100%
Total	280968	218047	153261	

In 2020, around 371,300 of individuals in the Atlantic Ocean were recorded as incidental catch for the purse seine fisheries (Table VIII). Some of them were kept on board representing a volume of about 280 t for 218,047 individuals. It must be noticed that for sensitive species like whale shark (2 individuals), sea turtles (129 individuals) and cetaceans (4 individuals), the percentage of individuals discarded alive reached 100% while for the group of Mobulids and Manta rays this percentage of survival at release reached 79 % (Table 28).

Length frequency data were regularly collected for several species of sharks and billfishes (Table 29) either kept on board (some billfish) or discarded (mainly sharks). The silky shark (*Carcharhinus falciformis*, FAL) is well represented in this sample for sharks while the Atlantic sailfish (*Istiophorus albicans*, SAI) is well represented in the sample for billfish.

Table 29 – Length data collected by scientific observers embarked on French purse seiners for shark species and billfish species

Sharks & Rays		Billfish	
Species	Length Collected	Species	Length Collected
BSH	1	BUM	154
FAL	1025	SAI	181
PLS	36	Total	335
SMA	2		
SPL	3		
SPZ	38		
Total	1105		

2. PORTUGAL

The Portuguese Institute for the Ocean and Atmosphere, I. P. (IPMA, IP) implements the EU. Portugal pelagic longline scientific observer program for vessels based on mainland Portugal. IPMA is a Public Institution, part of the indirect administration of the State and under the responsibility of the Ministry of the Sea.

IPMA has ample experience with scientific observer programs and has implemented the pelagic longline in ICCAT since 2010. The program is part of the Portuguese Administration (DGRM) Biological Data Collection Program (PNAB), established within the framework of the EU Data Collection Framework (DCF).

The scientific observers that carry out those duties are permanent employees (technicians) of the IPMA staff. All have ample knowledge and years of experience to identify ICCAT species and fishing gear configurations, and are trained and very experienced to observe and record accurately the information to be collected under the Program. They are also trained and highly experienced to carry out additional duties, such as collection of scientific samples and deploying conventional and electronic tags.

Until now the program is designed to achieve at least 5% minimum coverage. This is calculated from the previous year total effort and is measured in number of fishing sets. While onboard, the scientific observers record and collect data on 100% of the operations during each trip and on 100% of the catches on each set. The program is stratified to sample in the main fishing areas of the Portuguese pelagic longline fleet, namely 1) the temperate 2) NE Atlantic, 3) tropical NE Atlantic and 4) Equatorial regions.

Bearing in mind the increase of the minimum observer coverage recently adopted for tropical tunas (Rec. 19-02), for the surface longline vessels, the PT observer program is under re-evaluation in order to meet the current requirements of ICCAT provisions.

The vessel/trip selection is a mix of random and opportunistic. The reason is that the implementation of the program is voluntary for the vessels, so not all vessels of the fleet collaborate and are willing to take observers onboard. Still, with the good relations that IPMA maintains with most of the skippers and vessel owners, part of the fleet is willing to collaborate and take observers onboard. Due to the Covid-19 pandemic and restrictions that were put in place for onboard missions, in 2020 the program was very limited. Only one sea mission was possible to be carried out, specifically earlier in the year, before the March 2020 lockdown and restrictions that were put in place for the rest of the year. Due to this, the specific coverage achieved in 2020 was only 0.1%, measured in number of sets of the total fleet effort. The data was fully submitted to the ICCAT secretariat, using the ST-09 forms. Parallel to the scientific observer program described here, IPMA also maintains a self-sampling program where crews are trained to take, record and report biological data of the catch.

The data fields that are observed, collected and recorded in the IPMA observer Program exceed what is currently requested under paragraph 7 of ICCAT Rec. 16-14. Specifically, IPMA scientific observers currently record and collect information on:

- For each fishing trip: Details of the observer, vessel and license, boarding port and date, date of departure to sea, port and date of disembarking, notes from the catch landing;
- For each fishing set: Trip unique ID, fishing set unique ID, date of the set, time and coordinates while deploying (initial and final), time and coordinates while hauling (initial and final), upper and lower depth of the hooks, total number of hooks used, hook type and size, number of floats, leader material, bait used, length of the set, moon state, cloud coverage, wind speed and direction, water temperature, sighting of cetaceans, birds or turtles, use of tori lines, use of line weights, any additional notes;
- For each captured specimen: Fishing set unique ID, specimen unique ID, species ID, hooking mode, condition at hauling, size (FL, LJFL, TL or CCL, depending on the species), condition if discarded, sex, maturity stage (currently recorded for SWO and sharks), claspers size (elasmobranchs), notes if depredated, color of lightstick/lantern if used, specific bait used, specific leader material, specific hook type and size, samples collected (e.g., otoliths, vertebrae, spines, tissue for genetics, others), if photo was taken, any additional notes.

All captured specimens (from all taxa and species) are fully recorded in the program. This includes target species, bycatch, discards, and all interactions with vulnerable fauna as marine-turtles, sea-birds and marine-mammals. We also note that many biological samples that have been collected under our program have been used in multiple ICCAT/SCRS projects and for providing scientific advice, including the latest growth equations used for shortfin mako, genetic samples for ongoing swordfish, marlins and sharks stock delimitation projects, etc. Portugal also regularly deploy satellite tags on sharks and swordfish from the pelagic longliners, also as part of ICCAT/SCRS projects. All data is fully transmitted in due time and in full detail (high resolution) to ICCAT using the ST-09 form.

Regarding sharks, IPMA is currently responsible for the age, growth and tagging studies and participates in other works such as genetics (lead by the Japanese Fisheries Research Institute). All collected samples continue to be processed and analysed for the ongoing work.

IPMA continues to participate in the Small Tunas SMTYP and is responsible for the age and growth component. Additionally, under this program also collects gonads and genetic tissues for the remaining project tasks. Age and growth samples are processed in the IPMA laboratory, while all the remaining reproductive and genetic samples and data have been provided to the respective task coordinators.

IPMA continues to participate in the SWO biological sampling collection programme, and is responsible for the age and growth component, using both spines and otoliths. Besides the ageing, IPMA also collects and provides samples of genetic tissues for the population genetics component and reproductive organs for the reproduction task of the project. Additionally, IPMA scientists are involved in the Swordfish satellite tagging work and in the North Atlantic Swordfish MSE.

IPMA has also been collecting spines, otoliths and genetics samples of marlins and sailfish under the ICCAT Enhanced Program for Billfish Research - EPBR. Samples for this program are collected mainly from the tropical and equatorial eastern Atlantic. Within this program, IPMA coordinates the ageing component and provides samples for genetics. All data have been sent to the billfishes Working Group coordinator to contribute to ongoing studies

3. OTHER EU MEMBER STATES

The Cyprus Work Plan on Data Collection, prepared in accordance with EU Data Collection Framework, includes a scientific programme covering the Cyprus fleet fishing for large pelagic with surface longlines; the programme includes sampling both at landing sites and on-board. During 2020, due to COVID19 pandemic, scientific observer on-board program for swordfish and albacore deviated from planned operations. As a result, a small number of trips were sampled on-board. To adjust the loss of biological measurements, extra effort was given on landing sites to sample the landings based on a full probabilistic scheme.

Apart from detailed fisheries data (i.e. catch composition by vessel on a daily basis), information on the size composition of bluefin tuna and swordfish catches has been obtained from relevant measurements taken both from landings and on-board commercial vessels.

Scientific observations on board vessels targeting large pelagic fisheries are foreseen in the frame of the EU Data Collection Framework. Throughout the program scientific observers monitored fishing operations of drifting longliners, with special emphasis given to those targeting swordfish. A total of 89 swordfish targeting operations have been monitored in 2020 by scientific observers on board. No incidental catches of sea turtles and/or protected shark species have been recorded.

Maltese scientific observers cover the main fisheries with respect to Eastern bluefin tuna (long-liners) in line with ICCAT Recommendations. In addition, Maltese scientific observers also cover Mediterranean swordfish long-line fishing trips through the EU-wide framework for the collection of fisheries data. These observers follow appropriate training courses including data validation training. The information collected concerns all target and not-target species together with discard information. Collection of data is also extended to cover accidental catches of turtles, seabirds and marine mammals. The type of data collected refer to catch, discards, by-catch, vessels and fishing gear characteristics as well as biological parameters such as length, weight, sex, maturity and growth.

Italy carried out a National Observer Program in line with the current EU and ICCAT provisions, setting not only its specific scope but also scientific objectives. In particular a Convention was signed with the Polytechnic University of Marche (Ancona) – Department of Science of Life and Environment, including a National Wide Scientific Research Program on the most relevant Pelagic Species (BFT-SWO-ALB).

Annexes to Part II

Annex I

Summary of activities carried out pursuant to access agreements				
Country	Gear	Number of vessels	Related Quota	Remarks
Senegal	Purse seiners	28	BET	
"	Pole-and-liners	8	BET	
Côte d'Ivoire	Longlines	8	BET	
"	Purse seiners	28	BET	
Equatorial Guinea	-	-	-	Dormant since June 2001
Gabon	Purse seiners	27	BET	
"	Pole-and-liners	6	"	
"	Support vessels	4	"	
Gambia	Purse seiners	28	BET	
"	Pole-and-liners	10	BET	
Guinea Bissau	Purse seiners & longlines	28	BET	
"	Pole-and-liners	13	BET	
Liberia	-	-	BET	Dormant since December 2020 when last protocol expired
"	-	-	BET	"
Mauritania	Pole-and-line & longlines	15	BET	New protocol and Agreement renegotiated in July 2021. Waiting for signature and entry into provisional application
"	Purse seiners	25	BET	"
Morocco	Pole-and-liners	27	BET	
Cape Verde	Purse seiners	28	BET	
	Pole-and-liners	14	"	
	longliners	27	"	
Sao Tome and Principe	Purse seiners	16	BET	
"	Longlines	5	"	

Annex II

1. M:GEN 0023: TECHNIQUES USED TO MANAGE SPORT AND RECREATIONAL FISHERIES

1.1. Spain

España cuenta con normativa propia que regula la pesca de recreo: Real Decreto 347/2011, de 11 de marzo, por el que se regula la pesca marítima de recreo en aguas exteriores. En concreto, el artículo 10, establece que para la pesca desde embarcación se necesita una autorización específica para las capturas de estas especies, sometidas a medidas de protección diferenciada, que son las siguientes, tal y como se detalla en el anexo III (“Especies sometidas a medidas de protección diferenciada en la pesca marítima de recreo”): Código FAO Atún rojo (*Thunnus thynnus*) BFT, Atún blanco (*Thunnus alalunga*) ALB, Patudo (*Thunnus obesus*) BET, Pez espada (*Xiphias gladius*) SWO, Marlines (*Makaira spp.*) BUM, Agujas (*Tetrapturus spp.*) Marlín del Mediterráneo-Aguja blanca del Atlántico Aguja Picuda-Marlín peto MSP – WHM SPF – RSP, Pez vela (*Istiophorus albicans*) SAI.

Por otra parte, en cumplimiento del Reglamento TAC y cuotas anual, el Real Decreto 46/2019, de 8 de febrero, por el que se regula la pesquería de atún rojo en el Atlántico Oriental y Mediterráneo, reserva un 0,5577 % de la cuota asignada al Reino de España para la retención de eventuales ejemplares muertos en la actividad recreativa.

Por su parte, la Resolución de 12 de mayo de 2020, de la Secretaría General de Pesca, por la que se establecen las disposiciones de aplicación del plan de recuperación del atún rojo en el Atlántico Oriental y el Mediterráneo para 2020, prohíbe expresamente la captura dirigida a la muerte de ejemplares de atún rojo, obligando a la liberación de ejemplares vivos. La cuota sólo se contabiliza en caso de muerte accidental de ejemplares, que no pueden destinarse a la comercialización.

Existe actualmente un proyecto legislativo que renueva la legislación en materia de pesca recreativa a fin de mejorar el control.

Más detalles en anexo III.

1.2. France

L’arrêté du 18 mars 2021 précisant les conditions d’exercice de la pêche de loisir réalisant des captures de ton rouge (*Thunnus thynnus*) dans le cadre du plan pluriannuel de gestion du thon rouge dans l’Atlantique Est et la Méditerranée pour l’année 2021, prévoit les modalités de mise en oeuvre du régime d’encadrement de la pêche de loisir de ton rouge. L’ensemble des dispositions de ce texte font l’objet de contrôles, dans le cadre du plan national de contrôle des pêches adopté par la France.

1.3. Croatia

In 2020, Croatia allocated a total of 12.5t for big game recreational fishing and 5t for sport fishing.

In general, quota of recreational fishing is distributed equally among subjects who meet the conditions and criteria for utilisation of this quota following a public tender. A set of strict rules apply to the quota owners and vessels engaged in this specific type of fisheries such as: obligatory VMS device on board of vessel, obligation of prior notification of landing and authorisation of landing by the Ministry of agriculture, as well as obligatory document accompanying the fish caught. In sport fishery, however,

Quota is usually utilised within the authorised competitions organized by Croatian Sport Fishing Association. During the event, a fisheries inspector is always present, while the sampling of tuna (size, weight, etc.) is conducted by IOF (Institute of Oceanography and Fisheries).

Due to the COVID pandemic, no competitions took place in 2020.

1.4. Malta

In 2020, 0.64% of the maltese national quota was allocated to recreational fishing vessels and vessels were limited to catch one fish per day. Inspections were carried out by the Department for Fisheries and Aquaculture at

designated and non-designated ports to ensure that no landing of illegal Bluefin tuna takes place. Any relevant infringements were reported to the EU through Malta's interim and final reports on the implementation of the national control action programme. Bluefin tuna recreational data concerning catches were reported in the ICCAT forms for Task I and Task II data.

No recreational vessels were licensed to participate in the Mediterranean swordfish sport and recreational fisheries in 2020.

1.5. Portugal

Recreational and Sportive fishery is regulated by the Decree-Law 101/2013, of 25th July, and for mainland Portugal by the Ordinance 14/2014, of 23rd January. As for the Autonomous Region of Madeira the current legal framework for recreational and sports fisheries is guided by Decreto Legislativo Regional 19/2016, of 20th April and Portaria 484/2016, of 14th November. A package of measures is in place in order to collect as much information as possible during fishing tournaments that occur in this Region, including a set of rules to mitigate the negative impacts of this activity in relevant stocks. Amongst these provisions we highlight the promotion of the use of best practices such as catch and release in every fisheries targeting migratory species as well as the use of gears that facilitate release and increase survival rates of migratory species, in line with ICCAT Recommendations.

A licence issued by Madeira's responsible authorities (Direção Regional de Pescas da Madeira) is required to the exercise of this activity and every fishing tournament needs to be previously authorized by DRP. In case of no compliance with this rule, domestic legislation foresees the application of sanctions against the infractors. Regional authorities have been consistently promoting on field actions to engage the relevant sector, including visits to the marinas with the objective of drawing the attention of vessel's operators to the applicable legislation. During these actions flyers with relevant information is given to the sector. With the view to collect as much information as possible of this activity, on a regular basis documentation and enquiries are sent by the Regional Authorities to the operators, thereby acting as a reminder of the applicable framework. Catches of migratory species that may occur during recreational fisheries cannot be sold and shall be reported to the Regional relevant authorities so that these can be counted against the national quota. Portaria 484/2106 of 14th September promotes the use of best practices for catch and release, avoiding the use of wire traces. Operators are required to answer to monitoring inquiries of this activity.

For Bluefin tuna, catches of BFT are only admitted by vessels duly registered for this purpose. To this effect, an annual permit is required and the operator is required to provide mandatory information on the number, weight and length. All Bluefin tuna caught alive shall be promptly released or, if maintained on board and landed, shall be presented whole and eviscerated. No permits have been granted by the competent authorities in 2020.

For Blue Marlin, Portugal has established minimum sizes and other regulatory provisions, including a catch limit per day/vessel in its domestic legislation (Portaria 14/2014). In Madeira, according with the current domestic legislation (DLR n.º 19/2016), catches of Blue Marlin by recreational fisheries shall be released into the sea.

As part of the Portuguese Data collection program since 2016 a pilot project is in place in the Autonomous Region of Madeira aiming an insight of the so called "Pesca Grossa". It is also planned the development of an IT platform for the continuous collection of information by sportive fisheries operators.

In 2020, the Autonomous Region of Azores continued to put in place a set of initiatives aiming the improvement of data collection of recreational fisheries, namely:

- The implementation of an inquiry as a requirement for licensing this activity;
- On-line logbook for recreational fishery
- Phone inquiries
- Development of the Interrea Plasmar Project + - In July 2019 this project was approved, it aims to establish a system to allow fishermen to introduce catch and effort information, including the localization of the fishery while informing about the legal framework for the exercise of the activity, including information concerning forbidden or restricted fishing areas.
- On field studies in 5 islands of the Azorean Archipelago (São Miguel, Terceira, Faial, Pico e Flores), to be included in the national DCP 2020-2021, based on access point surveys to allow for the collection of robust data on the composition of catches, additionally this work will improve significantly information about fishing effort and other relevant parameters.

2. M:BFT 1025 - REPORT ON STEPS TAKEN TO ENCOURAGE TAG AND RELEASE OF ALL FISH LESS THAN 30 KG/115 CM

2.1. Spain

El porcentaje de captura de juveniles respecto al total de capturas de atún rojo es muy reducido, dado que el actual patrón de explotación de la flota y almadrabas españolas se dirige a ejemplares adultos. La flota que tiene más incidencia en la captura de juveniles es la de cañas y cebo vivo en el cantábrico. El Instituto español de Oceanografía dio un seguimiento particular a esta flota, con instrucciones expresas de fomentar el marcado de ejemplares juveniles por debajo de la talla requerida que fuesen liberados.

2.2. France

France precisely defines, allocates and accounts for the dedicated quota on all fish less than 30 kg / 115 cm arising from paragraph 27 of Rec. 17-07. This distribution is included in the National order of 31 January 2020 establishing the modalities for allocating the quota of Bluefin tuna granted to France for the year 2020.

3. M:BFT 31 - BCD TAGGING SUMMARY, SAMPLE TAG

3.1. Malta

Bluefin tuna landed is tagged with Government tags for internal purposes. Tags complement and do not substitute BCDs. No change to the tagging system was made in 2020 and 2021. No electronic tagging and release programme is undertaken by Malta

4. M:TRO 17 & 18: MAXIMUM ON BOARD BY-CATCH LIMIT FOR TROPICAL TUNAS AND MEASURES TAKEN TO ENSURE COMPLIANCE WITH M:TRO 17

1.1. Spain

Durante 2020 no se estableció límite de captura para buques no autorizados a la pesca de túnidos tropicales. Todos los buques de 20m de eslora o mayores que pesquen túnidos tropicales deben estar autorizados.

Los buques de apoyo a los atuneros cerqueros deben llevar una autorización emitida por la Autoridad Nacional (Permiso Temporal de Pesca) y comunicar a qué atunero cerquero facilitan apoyo.

1.2. France

According to Annex II of the French National order of 25 February 2013, by-catches of bigeye tuna are allowed within the limit of 3 tonnes per vessel and trip, only for vessels holding the Northern albacore tuna RFMOs fishing license in the ICCAT area with pelagic trawl gear in the Atlantic Ocean, North of 5 ° N.

1. M:SWO 07: DEVELOPMENT OR FISHING/MANAGEMENT PLAN FOR NORTH SWORDFISH

4.1. Spain

Los datos de capacidad para el pez espada en el Atlántico Norte en 2020 fue de 102 palangreros y la capacidad total de captura 6.509,07 t. En 2021, dicha capacidad fue de 101 palangreros y 6.470,23 t.

2. M:SWO 17. MAXIMUM ONBOARD BY-CATCH LIMIT OF N. SWO

4.2. Spain

España no permite capturas accesorias de pez espada a su flota.

4.3. **France**

In accordance with paragraphs 13 and 14 of ICCAT Recommendation 16-03, France has adopted a maximum by-catch limit for vessels not authorized to fish for North Atlantic swordfish. The catching and landing of North Atlantic swordfish with a live weight of less than 25 kg or a lower jaw length of less than 125 cm is prohibited, except for by-catches, which must not exceed 15% of the number of swordfish landed daily and by vessels.

3. M:SWO 18. MAXIMUM ONBOARD BY-CATCH LIMIT OF S. SWO.

4.4. **Spain**

España no permite capturas accesorias de pez espada a su flota.

4. M:ALB 06. MAXIMUM ONBOARD BY-CATCH LIMIT OF NORTHERN ALBACORE

1.3. **Spain**

España no permite capturas accesorias de atún blanco a su flota en el Atlántico Norte.

5. M:ALB 07. MAXIMUM ONBOARD BY-CATCH LIMIT OF S. ALB.

1.1. **Spain**

España permite capturas accesorias de atún blanco a la flota de palangre de superficie que captura al sur del paralelo 5°N. El límite máximo de captura es de un 5% del total de las capturas. En la práctica las capturas accesorias de esta flota son muy reducidas, menores del 1% de la captura total.

6. M:BIL01 : REPORT ON THE IMPLEMENTATION OF 19-05 AND 16-11

1.2. **Spain**

Se dispone como una obligación de los palangreros faenando en el Atlántico que liberen los ejemplares que lleguen vivos al buque y únicamente retengan los ejemplares muertos (Anexo I PTP Palangrero Atlántico 2020). España no se acoge a exención del cumplimiento del punto 4 de la Recomendación 19-05.

En el Anexo II del Real Decreto se incluyen las especies Blue y White Marlins como especies con medidas de protección diferenciadas, para las que se exige disponer de una autorización específica. En 2020 no se emitieron autorizaciones específicas para Blue y White Marlins.

Las pesquerías que pueden interactuar con estas especies son las de pez espada y tiburones. Actualmente España autoriza en exclusiva la captura de estos grandes pelágicos a la flota industrial de palangre de superficie. España no tiene pesquerías dirigidas a White Marlin.

Los datos contemplados en el Programa Nacional de Datos Básicos, así como los datos del Programa Nacional de Observadores de la SGP, sirven para la elaboración de tarea I y tarea II.

1.3. **Portugal**

As for the recreational fishery, Portugal has adopted domestic legislation (Portaria 14/2014).

The mandatory use of the ERS (EU Electronic Reporting System) has enabled the Portuguese fishing authorities to streamline their monitoring, inspection and surveillance capacities. All vessel over 12m overall are obliged to have installed and dully operational an ERS. In terms of control procedures, inspections are performed by the national authorities on a regular basis, both at sea and in port.

In 2020, Portugal had no White Marlin quota, and its quota for Blue Marlin amounted 46,44t. This quota is not allocated by vessel, being a global quota to accommodate eventual incidental catches. For 2021, the Blue Marlin

Portuguese quota is 46,21t (Regulation (EU) 2021/92), from which 1t is reserved for recreational fishery. In Madeira Catch & Release in recreational fisheries is foreseen in DLR 19/2016. Portaria 484/2106 of 14th September promotes the use of best practices for catch and release, avoiding the use of wire traces. Operators are required to answer to monitoring inquiries of this activity. Annex II of this legislation defines minimum sizes applicable to Blue and White Marlins.

All fish caught by commercial vessels is subject to a first sale in auction (DL 81/2005). Blue Marlin is not a targeted species and is only caught as by-catch. However, these opportunistic catches are an important element that contributes to bring the longline fishery social and economically viable.

The Portuguese Institute for the Ocean and Atmosphere (IPMA), together with the industry, developed in the past experimental fishing trials to assess the impact of the use of circle hooks, different gangion line materials and different types of bait on the catches of by-catch and target species. The results of these studies that took place in the North-eastern, Equatorial and South Atlantic have been fully reported to the SCRS and have been published in the peer-review scientific literature.

7. M :SHK 05 : DETAILS OF IMPLEMENTATION OF AND COMPLIANCE WITH SHARK CONSERVATION AND MANAGEMENT MEASURES

1.4. Spain

El Seguimiento de las capturas de tiburones se hace mediante el sistema de control del DEA (diario electrónico de abordaje) capturas y desembarques, así como el seguimiento científico mediante los programas de observadores implementados.

De forma general, los ejemplares de tiburón se han de desembarcar íntegros. No está permitido cercenar, mantener a bordo, transbordar o almacenar aletas de tiburón. Solo en un supuesto excepcional sometido a Permiso Especial de Pesca está permitido un máximo 5% de las aletas, bajo las medidas previstas en el párrafo 3 de la Recomendación 10-04. Para la concesión de este permiso es obligatorio que los capitanes efectúen anotaciones del peso de las aletas y de las partes restantes en el DEA (diario de a bordo) y guarden la documentación de los desembarques, transbordos o venta de aletas o partes restantes de tiburones. Es obligatorio notificar el desembarque 72 h antes de la hora prevista de llegada a puerto de las aletas o partes restantes.

El control de capturas de Marrajo dientuso se hace mediante observadores del Plan Nacional de Datos Básicos y el Programa Nacional de Observadores de la SGP (Secretaría General de Pesca). Solo se permiten en aguas ZEE de la UE conservar dos marrajos por marea y buque, siempre que arriben muertos al costado del buque.

Mediante la Orden ARM/2689/2009, de 28 de septiembre, se prohíbe la captura de tiburones zorro (familia Alopiidae) y tiburones martillo o cornudas (familia Sphyrnidae). Se prohíbe a los buques pesqueros españoles la captura, transbordo, desembarque y comercialización de los tiburones de la Familia Sphyrnidae (géneros Sphyrna y Eusphyrna), y Familia Alopiidae (género único Alopias) en todos los caladeros en los que realicen su actividad, incluyendo las aguas jurisdiccionales de terceros países con los que existe un acuerdo de pesca firmado por la Unión Europea, y aquéllas a las que se pueda acceder mediante un acuerdo privado o un contrato de arrendamiento de buques pesqueros.

La Orden AAA/658/2014, de 22 de abril, regula la pesca con el arte de palangre de superficie para la captura de especies altamente migratorias mediante control de estas capturas con observación a bordo, que en el caso del cerco es del 100% de cobertura.

Los programas de recopilación de datos de captura, esfuerzo, talla y descartes de tinterera del Atlántico norte se implementan por medio de observadores del Plan Nacional de Datos Básicos del IEO y, el Programa Nacional de Observadores de la SGP que se implementa desde 2017.

Solo pueden retenerse un número limitado de marrajo (siempre que arribe muerto al costado del buque) por buque y marea. Se han establecido medidas de control y medidas de observación, incrementando la cobertura mínima de observación en palangre.

Los observadores del Plan Nacional de Datos Básicos y el Programa Nacional de Observadores de la SGP consignan el número de descartes y liberaciones de tiburones oceánicos, con una indicación de su estado (vivos o muertos).

Más detalles en anexo III.

1.5. Portugal

Portugal provided all relevant information under Task 1 and 2 regarding sharks. IPMA has also provided biological information collected by the observers on board Portuguese longliners.

The Portuguese fleet is encouraged to use best-handling practices to release sharks unharmed. When scientific IPMA observers are onboard, general handling practices are transmitted to the skipper and crew, focusing on the importance to use such practices to promote the survivorship of those vulnerable species. This is also done for the marine turtles. However, such work is done on an opportunistic basis and not systematically. Portugal considers that a manual of best practices on the safe releasing of sharks produced by ICCAT would be useful for dissemination to the relevant fleets.

The Portuguese Institute for the Ocean and Atmosphere (IPMA) implements the Portuguese scientific observer programme for the mainland. Personnel from this Scientific Institute embarks in longliners operating in the Atlantic and Indian Oceans assuring compliance with the relevant ICCAT provisions related with observer coverage/data collection. Under this observer programme, biological information and data related with the fishery are collected for species managed by ICCAT, including incidental catches retained or rejected (species/non retained size data) covering the 4 major areas of activity (North eastern, northeast tropical, Equatorial and Southern hemisphere). Scientific observers record a substantial amount of fisheries data, including species-specific incidental shark catches.

The data collection encompasses the collection of:

- gear characteristics;
- fishing regime (hook style and gangion type);
- effort (number of hooks);
- catch composition (retained and discarded) and fate at species level;
- Size data for mandatory and major by-catch species (retained and discarded);
- Sex data for major species (including sharks).
- Additionally, a voluntary self-sampling scheme by skippers has been put in place for a number of years, as well as, the recovery of historical data from skipper's personal logbooks;

Information on vulnerable species that may be incidentally caught by longliners such as marine turtles, seabirds and marine mammals is also collected and reported.

IPMA scientific work is planned and scheduled to closely follow the SCRS schedule, in order to provide useful information for the species most relevant for the SCRS in each specific year, usually species that are under assessment. In the past few years most shark related work was therefore focused on the shortfin mako, as the species with the most recent stock assessment and projections. The next blue shark stock assessments was preliminary planned for 2021 and IPMA was preparing standardized CPUE indices, but the stock assessment has been postponed by ICCAT. It is also noted that in the past few years, including in 2020 and 2021, IPMA has been developing and presenting meta-analysis work on technical gear changes (circle hooks, bait type and leader materials) to the Sub-Committee on Ecosystems. When the next blue shark stock assessment or any other specific work is requested by the SCRS, IPMA will provide and contribute to such work. Additionally, we emphasize that IPMA continues to fully provide all observer data (including from all sharks species) in full detail under the ST-09 form.

Control is made on a daily basis by the ERS and also throughout inspections at sea and in port, during landing operations. Control measures in place include the crosschecking of different elements such as ERS/VMS/landing declarations/sale documents, risk analysis, etc.

Mako shark is not a targeted species, although incidentally catches do occur. In the last decade the Portuguese fleet has reduced severely its catches of shortfin mako. In order to operationalize paragraph 3 of Rec. 19-06 the Portuguese Administration has requested an analysis to IPMA to establish the catch threshold per vessel, while considering different elements, such as time and area of activity and the different sizes of the fishing vessels

IPMA is currently responsible for the age and growth ICCAT studies. All collected samples continue to be processed and analyzed for the ongoing work. Additionally, IPMA continues to collect tissues for genetics that are sent to the scientific partner responsible for such work, in this case the Japanese Fisheries Research Institute. All this work is carried out under the ICCAT Shark Research and Data Collection Programme, established by the ICCAT Sharks Species Groups and endorsed by the SCRS.

1.6. Croatia

No reported quantities of shark species in ICCAT related fisheries in Croatia. The ICCAT Croatian fishery is highly selective, and there is no commercial interest for sharks on local or regional market. Most of the ICCAT regulated shark species appear only rarely in the Adriatic Sea.

Porbeagle (*Lamna nasus*), species *Sphyrna zigaena* and North Atlantic shortfin mako sharks (*Isurus oxyrinchus*) are by their natural geographical distribution considered rare species in the Adriatic Sea. However, they are included in the catalogue of species, which can be reported in fishing logbooks, and are categorized as strictly protected under the nature protection legislation.

Bigeye thresher (*Alopias superciliosus*), Oceanic whitetip and Silky (*Carcharinus falciformis*) sharks do not inhabit Adriatic Sea.

Hammerhead sharks of the family Sphyrnidae are very rare in the Adriatic Sea. Only the species *Sphyrna zygaena* rarely appears in the southern Adriatic, however, the Croatian fleet does not operate in this area.

Data collection framework covers also scientific observer coverage on ICCAT regulated fisheries. Data on shortfin mako (*Isurus oxyrinchus*) if caught incidentally, would be analysed by the observer.

8. M:BYC 01, 02 & 03 : REPORT ON IMPLEMENTATION OF REC. 10-09, PARAS 1, 2 AND 7, AS AMENDED BY REC. 13-11, AND RELEVANT ACTIONS TAKEN TO IMPLEMENT THE FAO GUIDELINES; IMPLEMENTATION OF SEABIRD MITIGATION MEASURES AND NPOA FOR SEABIRDS AND STEPS TAKEN TO MITIGATE BY-CATCH & REDUCE DISCARDS AND ANY RELEVANT RESEARCH IN THIS FIELD,

1.1. Spain

En cuanto a la implementación de la Recomendación ICCAT 10-09, durante el año 2020, el Instituto Español de Oceanografía, en el marco de varios proyectos de investigación, ha continuado observaciones con fines científicos relacionadas con la interacción entre las actividades pesqueras del ámbito ICCAT y las tortugas marinas.

Para dar cumplimiento a lo establecido en esta Recomendación, la Administración española cuenta con normativa específica donde se contemplan medidas para evitar la captura de tortugas marinas (Artículo 19 de la Orden AAA/658/2014).

Asimismo, previamente a la emisión del Permiso Temporal de Pesca, las embarcaciones (palangreros de superficie) deben presentar junto a su solicitud, un anexo donde se relacionen los dispositivos de liberación de tortugas. Del mismo modo, el anexo al Permiso Temporal de Pesca contempla entre las condiciones de concesión y obligaciones a cumplir por la empresa armadora o capitanes de los buques, instrucciones generales para la correcta anotación de información de las interacciones ocurridas con tortugas marinas.

La Administración española cuenta con normativa específica donde se contemplan medidas de mitigación para evitar la captura de aves y tortugas marinas.

Además, previo a la emisión del Permiso Temporal de Pesca, las embarcaciones deben cumplimentar una ficha específica sobre medidas de mitigación de aves y tortugas; cumpliendo asimismo con las Recomendaciones

ICCAT 07-07 y 10-09. Estas fichas contienen información sobre los mecanismos de liberación de especies, como desanzuelador, elevador, cortador pernos, etc.

1.2. Malta

Any potential by-catches of sea turtle are returned to the sea unharmed to the extent possible. Information on such by-catches is collected and reported through respective ICCAT forms.

Various sea turtle species are recognised for their conservation importance and subject to management measures under national law by Legal Notice 311 of 2006 under Schedule VI and VIII. Among others, these include the following species: *Caretta caretta*, *Chelonia mydas*.

The national legislative framework governing fisheries management is established under Chapter 425 of the Laws of Malta.

The measures employed by Maltese fisheries for the reduction of discards and by-catches include provisions foreseen under ICCAT Recommendations 17-07, 18-02, 19-04 and 16-05, with regards to limitations on quotas, fishing seasons, minimum sizes and type of gear utilized for BFT and SWO longline fisheries.

1.1. France

The vessels fishing in water likely to encounter sea turtles or fishing with drifting FADs are putting live entangled turtles at sea.

Incidental catches of sea turtles and seabirds are recorded in the observed fisheries, and reported as part of the observer reports. These incidental catches are regularly declared by France in the context of Task I/II.

1.2. Greece

Data collection regarding dead or injured individuals of sea turtles are recorded by the relevant authorities of the Ministry of Maritime Affairs and Insular Policy but no connection to large pelagic fisheries is concluded so far. A relevant circular has been sent to all regional authorities, to collect data regarding incidental catches of sea turtles, as reported by fishermen. It is an obligation for all fishermen engaged in large pelagic fisheries to record and submit data for incidental catches of protected species through ERS (Electronic Reporting System). Moreover, authorities continuously inform fishermen for the need of protection of protected species and the importance of preserving their populations.

9. M:SDP 01: DESCRIPTION OF PILOT ELECTRONIC STATISTICAL DOCUMENT SYSTEMS.

No se han dado avances en la implementación de esta medida, que no es obligatoria.

Annex III

SECCIÓN 4: IMPLEMENTATION OF OTHER ICCAT CONSERVATION AND MANAGEMENT MEASURES

4. Spain

La pieza angular del sistema de seguimiento de pesca es el diario electrónico de a bordo, que sistematiza la recepción de datos de capturas, desembarques y transbordos. En las instrucciones específicas dadas a la flota en el momento de la emisión de la autorización de pesca (Permiso Temporal de Pesca, o PTP) se recuerda la obligación de comunicar las capturas, desembarques o transbordos realizados a nivel de especie. Para facilitar esta tarea se entrega un listado con los códigos de las especies más comúnmente capturadas y una guía de identificación. No obstante, dentro de algunas familias sigue siendo difícil la identificación individual de la especie por lo que el desglose final es realizado por los expertos del IEO (Instituto Español de Oceanografía) en función de los datos recogidos por los observadores y en los muestreos en puerto.

4.1. Paneles

En esta sección, se incluye la información descrita por paneles actualizada y la información sobre el desarrollo de la campaña en lo relativo a inspección, referido todo a la campaña 2020.

4.1.1. *Túnidos tropicales (PANEL I):*

Durante 2020 un total de 11 buques cerqueros congeladores y 7 buques cañeros llevaron a cabo actividad pesquera en aguas del Océano Atlántico dirigidos a la captura de túnidos tropicales. Además, también se han registrado capturas de estas especies por parte de la flota artesanal de las Islas Canarias con artes de cañas y cebo vivo y capturas accesorias de los buques dirigidos a la captura de atún blanco.

4.1.2. *Atún Rojo (PANEL II):*

En la gestión de la pesquería de atún rojo, España ha mantenido un elevado nivel, participando activamente y liderando el desarrollo y aplicación de las medidas de control y gestión necesarias que han logrado la recuperación del recurso en el Atlántico Este y Mediterráneo. Se ha mantenido la aplicación de medidas que van más allá del mínimo requerido por las propias normas, comunitaria e internacional. Estas son las principales medidas aplicadas en 2020:

Antes del inicio de la campaña de pesca de 2020, fue remitido a la Comisión Europea el ***Plan de pesca anual para la flota española que captura Atún Rojo***. Dentro de este plan se recogen todos los aspectos para la gestión de la citada pesquería durante 2020, incluyendo las medidas para el control de la cuota individual de los buques cerqueros que operan en el Mediterráneo.

La Resolución de la Secretaría General de Pesca por la que se establecen las disposiciones de aplicación del plan de atún rojo en el Océano Atlántico Oriental y el Mar Mediterráneo que fue aprobada en 2020, recoge todas y cada una de las obligaciones en materia de pesca y control de atún rojo al objeto de asegurar el estricto respeto de la cuota asignada, incluyendo el establecimiento de un fondo de maniobra de cuota no asignada para evitar sobrepasamientos de la cuota total asignada a España.

4.1.3. *Atún Blanco del Norte (PANEL II)*

En cumplimiento de la Recomendación (98-8) de la ICCAT, sobre limitación de capacidad de pesca de Atún Blanco del Norte, se elaboró la lista de buques españoles que estuvieron presentes en la pesquería de dicha especie durante el periodo 1993-1995. Ninguno de dichos buques utiliza como arte de pesca redes de enmalle a la deriva, empleando todos los buques artes de anzuelo: curricán a la cacea y cañas con cebo vivo.

En este sentido, y con el fin de controlar la limitación de la capacidad pesquera en 2005, se elaboró la lista de buques que podían dirigirse a la captura de Atún Blanco tras la presentación de solicitudes de pesca por parte de los interesados. El número total de buques incluidos en esa lista fue de 700.

Por otra parte, cabe destacar que mediante la Orden Ministerial de 17 de febrero de 1998, se regula la pesca de túnidos en el Océano Atlántico al norte de 36° norte, siendo obligatoria para las empresas armadoras de los buques autorizados el remitir a la Dirección General de Recursos Pesqueros, partes mensuales sobre los días de actividad por zona de esfuerzo así como capturas por especies y zonas de pesca. También, se han de remitir las Declaraciones de Desembarque cada vez que éste se produzca, en la que, constarán las cantidades de túnidos desembarcadas, diferenciadas por especies, formas de presentación y áreas de captura.

En el año 2020, se concedió autorización a 611 buques.

4.1.4. *Atún Blanco del Sur (PANEL III)*

No se concedieron autorizaciones para la pesca dirigida de esta especie al sur del paralelo 5°N. Tan sólo se produjeron algunas capturas accesorias por parte de la flota de palangre de superficie y atuneros cerqueros congeladores que trabaja en esa zona.

4.1.5. *Pez Espada (PANEL IV)*

Mediante la Orden AAA/658/2014, de 22 de abril, por la que se regula la pesca de especies altamente migratorias, únicamente se autoriza la captura del pez espada, tiburón azul, marrajo dientuso y tiburones pelágicos, a la flota de palangre de superficie incluida en el Censo Unificado de Palangre de Superficie.

España dispone de una normativa de palangre de superficie, único arte autorizado a la captura de pez espada, aglutinada en la Orden AAA/658/2014, de 22 de abril.

En el área de ICCAT se establecen cuatro zonas diferenciadas para la gestión de la pesca. Así, esta Orden establece siete zonas de pesca:

Zona1: Mediterráneo.

Zona 2: Aguas nacionales hasta 80 millas en el Océano Atlántico.

Zona 3: Aguas del Océano atlántico al norte del paralelo 5° Norte y por fuera de las aguas nacionales a 80 millas de las líneas de base.

Zona 4: Aguas del Océano Atlántico al sur del paralelo 5° Norte.

La Orden establece un censo unificado de buques autorizados a desarrollar la pesca con el arte de palangre de superficie, como instrumento que proporcione una mayor seguridad jurídica y control de las posibilidades de pesca, habiéndose tenido en cuenta para la asignación de las distintas zonas de pesca, la autonomía de desplazamiento y las medidas en G.T.

La cuota de Pez Espada del Océano Atlántico, tanto del stock Norte como Sur, se ha distribuido de forma individual entre los buques con posibilidades de acceso a las zonas 2, 3 y 4 del Censo, teniendo en cuenta para ello, las capturas históricas del buque. De este modo, se refuerza la gestión de estas posibilidades de pesca mediante el control posterior, con las declaraciones de desembarque de los buques, minimizando el riesgo de sobre pesca.

Igualmente, la orden citada establece; las características técnicas del palangre de superficie, su señalización, medidas para evitar las capturas de aves y tortugas marinas, los cambios de zona, la transmisión de posibilidades de pesca entre buques, ya sea total o parcial, informes de capturas y fletamentos.

Por otra parte, el total de buques con licencia para la captura de pez espada en 2020 para el Atlántico, excluyendo el Mediterráneo, fue de 131 palangreros.

4.1.5.1. *Pez Espada del Mediterráneo.*

Desde el año 1998; España viene regulando la pesca de túnidos y especies afines en aguas del Mediterráneo mediante el Real Decreto 71/98. Esta norma regula la pesca de especies de competencia de ICCAT en el Mediterráneo, estableciendo medidas técnicas para las artes de pesca y aparejos, medidas de gestión de la pesquería, y normas de control de la pesquería.

El número total de permisos de pesca emitidos en 2020 para la zona Mediterráneo fue de: 51 buques.

4.1.5.2. Tiburones

En el año 2009 fue publicada la *Orden ARM/1647/2009, de 15 de junio, por la que se regula la pesca de especies altamente migratorias*, mediante la cual se prohíbe la captura, tenencia a bordo, desembarco o comercialización de pez espada (*Xiphias Gladius*), tiburón azul (*Prionacea Glauca*), Marrajo dientuso (*Ixurus oxyrinchus*) y cualquier otro tiburón pelágico, incluida la captura accesoria o fortuita, por parte de cualquier buque que no se encuentre incluido en el censo unificado de palangre de superficie. Mediante esta norma se da cumplimiento a las medidas recogidas en la Recomendación 08-07 sobre la conservación del zorro ojón (*Alopias superciliosus*) capturado en asociación con las pesquerías gestionadas por la ICCAT, e incluso va más allá al incluir al resto de especies de tiburones pelágicos así como al pez espada, a través de la reducción del esfuerzo pesquero y por tanto de las capturas realizadas sobre estos stocks. Esta Orden fue modificada mediante la Orden ARM/1793/2011, de 27 de junio, afectando ésta únicamente a la captura accidental de pez espada.

Con posterioridad, y también a respecto de los tiburones, es importante destacar que España tiene prohibido desde el año 2009 (Orden ARM/2689/2009), la captura de los tiburones zorro (familia Alopiidae), y los tiburones martillo o cornudas (familia Sphymidae).

La implementación de las recomendaciones de ICCAT para tintorera y marrajo dientuso ha implicado la puesta en marcha de un programa para estas pesquerías que incluye el embarque obligatorio de observadores a bordo para los buques que retienen marrajo dientuso muerto, con la obligación de liberación de los ejemplares vivos.

Las capturas de las especies de tiburones de mayor relevancia por parte de la flota española en el área de ICCAT fueron de 30.210,302 t de la especie *Prionacea Glauca* (Tiburón azul) y 1.976,246 t de *Isurus Oxyrinchus* (marrajo dientuso).

4.1.6. Pesca de recreo

El Real Decreto 347/2011, de 11 de marzo, regula la pesca marítima de recreo. Esta regulación establece un régimen general al que someter el ejercicio de la pesca recreativa en sus diferentes modalidades, de conformidad con el derecho internacional aplicable.

En aguas litorales esta actividad es gestionada por las administraciones regionales competentes en la materia. En aguas exteriores la gestión se coordina desde la Administración General del Estado. En todo caso son las comunidades autónomas del litoral las que concedan las correspondientes licencias o autorizaciones de actividad a las embarcaciones recreativas.

Este régimen de participación autonómica no se establece para la captura de aquellas especies sometidas a un régimen de protección diferenciada, cuyo ejercicio requiere de una autorización a conceder de forma centralizada por la Secretaría General de Pesca puesto que se deben adoptar medidas especiales de protección para determinadas especies sensibles que se encuentran reguladas por organismos regionales de pesca, encaminadas a la consecución de una explotación sostenible de las poblaciones basadas en un conocimiento preciso del esfuerzo que representa la pesca recreativa. Este es el caso del atún rojo.

A los efectos de esta regulación, las aguas exteriores de España se dividen en cuatro zonas que constituyen unidades de gestión diferenciadas: Cantábrico y Noroeste, Golfo de Cádiz, Mediterránea y Canaria.

a) La zona del Cantábrico y Noroeste comprende las aguas que se extienden desde la frontera con Francia, en la desembocadura del Bidasoa (1° 47' W), hasta la frontera con Portugal, en la del río Miño (41° 52' N).

b) La zona del Golfo de Cádiz se extiende entre el meridiano de Punta Marroquí, en las proximidades de Tarifa (5° 35' W) y la frontera con Portugal en la desembocadura del Guadiana (7° 24' W).

c) La zona Mediterránea comprende las aguas situadas al este del meridiano de Punta Marroquí (5° 35' W), incluyendo las aguas sobre las que España ejerce soberanía o jurisdicción y que contornan las islas Baleares, la isla de Alborán, las ciudades de Ceuta y Melilla y la zona de protección pesquera del Mediterráneo definida en el Real Decreto 1315/1997, de 1 de agosto, por el que se establece una zona de protección pesquera en el mar Mediterráneo hasta el cabo Cerbere (42° 26' N).

d) La zona Canaria comprende las aguas exteriores del Archipiélago Canario

En el ejercicio de la pesca marítima de recreo sólo se podrán capturar las especies autorizadas recogidas en el Anexo I del Real Decreto.

Asimismo, once especies (BFT, ALB, BET, SWO, BUM, MSP, WHM, SPF, RSP, SAI y HKE) se encuentran sometidas a medidas de conservación diferenciadas para dar cumplimiento a las obligaciones internacionales emanadas de la ICCAT. Para la captura o tenencia a bordo de especies sometidas a medidas de protección diferenciada, se debe disponer de una autorización específica expedida por la Dirección General de Recursos Pesqueros de la Secretaría General del Pesca.

España sólo permite la captura y suelta de ejemplares vivos de atún rojo. Las embarcaciones autorizadas para esta actividad deben adoptar las medidas necesarias para evitar la muerte de ejemplares. En caso de muerte accidental, las capturas son contabilizadas y se detraen de la cuota de atún rojo asignada a España, pero no se permite la comercialización ni la venta del pescado. No está permitida la celebración de eventos deportivos que tengan como objetivo el atún rojo.

En 2020 la cuota consumida por muerte accidental de ejemplares de atún rojo capturados por parte de la flota deportiva y recreativa ascendió a 34.041,00 kg

4.1.7. *Aplicación del programa de documento estadístico ICCAT para Pez espada y Patudo 2020.*

Las importaciones en territorio nacional de las especies de Patudo y Pez Espada durante el año 2020, se han registrado las siguientes cantidades:

Importaciones de Pez Espada: 1.8432 t. Siendo Marruecos el principal origen de estas importaciones.

Importaciones de Patudo: 8.638 t de patudo congelado. Siendo Guatemala el principal origen de las importaciones.

4.2. **Actividades y Esquemas de Inspección**

4.2.1. *Medios de inspección utilizados*

4.2.1.1. *Campaña del atún rojo 2020 en el Mediterráneo y el Cantábrico-NW. Control de la veda de SWO y ALB en el Mediterráneo*

En el desarrollo de las Campañas de este apartado durante el 2020, se han contado con los siguientes medios materiales y humanos para las labores de inspección, control y vigilancia:

a) Medios marítimos:

a. Colaboración Secretaría General de Pesca (SGP)-ARMADA- Donde se acuerda el Plan Parcial de Vigilancia e Inspección de los siguientes puntos:

- Zona de vigilancia: mar territorial del Mediterráneo, y ZPP del mar Mediterráneo.
- Control de la pesquería de túnidos y especies afines, principalmente atún rojo y pez espada, objeto del programa específico de control e inspección del Mediterráneo.
- Inspección y vigilancia de las actividades de pesqueros en general, con independencia de su pabellón, para verificar el debido cumplimiento de la normativa vigente.
- Controlar permanentemente la actividad de las artes o redes no reglamentarias, en especial atención a las redes de enmalle a la deriva.
- Impedir la actividad pesquera de buques de terceros países.

Para lograr estos objetivos, se establece la operatividad del patrullero de altura “ALBORAN” desde el inicio de la campaña de cerco hasta principios de junio con embarque de inspectores españoles a bordo. Debido a la crisis sanitaria producida por el COVID-19, durante el 2020 no se produjo el embarque de inspectores franceses durante la campaña de cerco.

Durante el periodo de entrada en puerto por parte del buque ALBORAN, ejerce labores de apoyo e inspección en el área de actuación el patrullero ligero "SA COSTERA" mediante embarque de un inspector español.

- b. Se realizaron colaboraciones con la Guardia Civil, englobadas dentro del "Programa PACIAP" con participación habitual de distintas patrulleras, entre otras, destaca la participación de la patrullera Rio Guadalete, durante la campaña de almadraba y actuaciones en el Estrecho de Gibraltar.

Relativo a la veda del pez espada (SWO) y del bonito del norte en el Mediterráneo (ALB), se llevaron a cabo misiones marítimas tanto en el área de las Islas Baleares como en el área de Levante de forma rutinaria.

Se detectó una presunta infracción relacionada con la captura de un ejemplar de SWO durante la época de veda.

b) Medios aéreos:

Los medios aéreos empleados trabajaron de forma coordinada con los demás medios de vigilancia empleados en las distintas campañas, para explorar áreas en las que se hubiera detectado o pudiera esperarse la presencia de actividad pesquera, ampliando así el radio de inspecciones.

Durante el 2020, el principal medio de inspección aérea han sido los helicópteros "CUCO" de la Guardia Civil, complementados con el uso de aviones pilotados por el mismo cuerpo de seguridad y bajo el mismo nombre.

Los Servicios de Inspección han llevado a cabo múltiples misiones aéreas relacionadas con el control de la veda de SWO, en las cuales, se estableció como objetivo dentro de las mismas el avistamiento de buques palangreros de superficie así como buques arrastreros y de cerco de pequeños pelágicos. En la mayoría de las misiones relacionadas no se detectó actividad pesquera relacionada con la flota de palangre y, cuando se detectó, no se determinó ninguna presunta infracción.

Además, durante el año se programan misiones aéreas en función de la actividad pesquera en la zona, con los datos proporcionados por el Centro de Seguimiento de Pesca en Madrid, y contaron con presencia de inspectores de pesca a bordo.

c) Medios Humanos:

Para el correcto desarrollo de la campaña del atún rojo y pez espada capturado en el mar Mediterráneo, la Subdirección General de Vigilancia Pesquera y Lucha contra la Pesca Ilegal centra las prioridades en varios frentes:

- Atención preferente durante toda la campaña de los Inspectores de Pesca de las Delegaciones y Subdelegaciones del Gobierno en las Provincias implicadas en las campañas.
- Participación en las misiones asignadas en tierra, tanto en España como en otros Estados Miembros, en caso de activación de los equipos mixtos previstos en el JDP del Mediterráneo.

4.2.1.2. Campaña de la costera del bonito 2020:

En el desarrollo de la Campaña del 2020 se han contado con los siguientes medios materiales y humanos para las labores de inspección, control y vigilancia: Colaboración entre el Servicio Marítimo de la Guardia Civil, desarrollo de misión con la Armada y trabajo coordinado de los inspectores de periferia y de Servicios Centrales.

a) Medios marítimos:

Se realizó embarque en el patrullero de altura ARNOMENDI, con un inspector de pesca español en el periodo durante 19 días en el mes de agosto.

En este embarque, se realizaron labores de inspección durante la campaña del bonito y, dentro de los objetivos se incluye el control de la captura de atún rojo por parte de este segmento de flota ya que es una pesquería susceptible de captura de dicha especie.

b) Observaciones

En marzo de 2020 se declaró el estado de alarma en España debido a la crisis sanitaria acontecida a nivel global por el COVID-19.

Por parte de los Servicios de Inspección se realizó una rápida adaptación para trabajar máximas condiciones de seguridad laboral.

Además del control detallado en las campañas descritas previamente, se realiza apoyo en comisión de servicio de Inspectores de Pesca de los Servicios Centrales durante el primer trimestre del año al caladero canario para el control de las capturas de atún rojo en dicho caladero y durante el resto del año, en el área del Golfo de Cádiz para el control de la flota que captura atún rojo en el Estrecho.

Según los datos analizados, se obtienen las siguientes conclusiones:

- Durante el año 2020 el número de inspecciones y controles de captura enmarcadas en el ámbito de ICCAT, asciende a más de 1200 inspecciones entre misiones terrestres y marítimas, complementadas con más de 100 avistamientos tanto a través de misiones aéreas como marítimas así como desde misiones de vigilancia desde tierra.
- A lo largo del 2020, siguiendo la estrategia de años anteriores, se desarrollan misiones cuyo objetivo era la vigilancia de las actividades pesqueras para poder estudiar e investigar las estrategias infractoras en determinadas áreas. Dado que estas misiones se desarrollan sin que se detecte la presencia inspectora, no se levantan actas durante el desarrollo de dichas misiones.
- Se registran en torno a 120 inspecciones con infracciones, detectándose en un tercio de dichas actuaciones más de una infracción.
- Debido a la crisis sanitaria global acontecida por el COVID-19 cabe destacar que durante algunos periodos del año se redujo la actividad de flota.

5. Malta

5.1. Bluefin tuna fishery

5.1.1. Quota management:

During 2020, the Maltese bluefin tuna fishery was authorised in accordance with provisions as set through ICCAT Rec.18-02. Malta managed its catching quota through individual allowable catches assigned to each vessel per fleet segment. Purse seine and surface longline gears were used in commercial fishing during 2020. No traps, baitboats or pelagic trawlers are employed in the bluefin tuna fishery by the Maltese fishing fleet.

One purse seine vessel was authorized to fish for bluefin tuna between 26 May and 1 July 2020. This purse seine vessel used up its allocated quota on 19 June 2020. For long line vessels, the established fishing season for 2020 was set from 15 April to 31 December 2020 or until quota exhaustion. In the case of the long line fishery, the fishing season for operational artisanal vessels below 12m was set from 1 May to 19 June 2020 or until quota was exhausted. In 2020, vessels authorised for recreational bluefin tuna fishing were limited by a daily quota of an individual fish per vessel up to a maximum fleet quota established in Malta's management plan. A portion of the

national quota was reserved as a contingency measure in case of accidental catches of bluefin tuna within the swordfish fishery.

5.1.2. **Control and enforcement:**

5.1.2.1. 2020 Inspection Plan for the Fishing Season

The Fisheries Control Unit of the Department of Fisheries and Aquaculture (DFA), has a complement of staff that covers a 24/7 roster. This will ensure that inspectors are available to monitor and control all catches at all times during the BFT fishing season.

The officers on duty for the day and night shift, amongst other duties, were responsible for:

- 100% monitoring of the authorised vessels through the VMS or GPRS;
- 100% control of landings at designated ports to landings based, and spot checks at non-designated ports to ensure that BFT is not landed outside a designated port;
- 100% of caging with the stereoscopic camera;
- 100% control of harvesting activities.
- Daily carrying out of inspections at the Central fish market.

5.1.2.2. 2020 Level of Inspections in Ports

Landings were inspected by Fisheries Protection Officers and Landing Officers. Random checks were also carried out by the Fisheries Protection Officers at designated and non-designated ports with at least 2 non-designated places visited every week and 2 designated ports visited every week outside landing calls.

Landings of bluefin tuna were only authorised in one of the 5 designated ports: Mgarr (Gozo), Marsalforn (Gozo) Marfa, Valletta and Marsaxlokk. The real time monitoring of the landings of these vessels were done through the officers present at each designated port and through the verification and validation of the Bluefin tuna Catch

documents (BCDs). The designated transshipment port was Valletta port, and all transshipments were subject to full inspection and authorization by the DFA.

5.1.2.3. 2020 Level of Inspection on Gears

Fisheries Protection Officers inspected all changes of fishing gear throughout the bluefin tuna fishing season once the individual quota of each vessel had been exhausted.

A minimum of 2 port inspections per week were also conducted to confirm that fishing gear on-board is compliant with regulations and in line with the authorisation of the respective vessel.

5.1.2.4. Inspections by the Armed Forces of Malta

A set of patrols and inspections requested by the Department of Fisheries and Aquaculture from the Armed Forces of Malta were carried out during the period of the plan.

5.1.2.5. Prohibition of aircraft:

In 2011, Subsidiary Legislation 499.21 Civil Aviation (Restriction of Flying Regulation) was amended by Legal Notices 411 of 2007 and 160 of 2011 to ensure the prohibition of aircrafts related to fishing throughout the months of May, June and July. This legislation has been implemented in collaboration with the AFM and Civil Aviation in 2019.

5.1.2.6. Monitoring of caging operations

In 2020, all caging operations of Bluefin tuna were monitored by the use of the stereoscopic camera which allowed for accurate estimations on the total number and total biomass of live fish caged. All carried over live bluefin tuna were transferred to other cages using the stereoscopic camera. A traceability system in farms was also acquired by video recording all farm internal transfers. Random control measures were also undertaken in farm cages between the completion of caging operations and the first caging of the following year. An ICCAT regional observer was deployed on the only operative Maltese purse seiner. ICCAT Regional Observers were also deployed to cover 100% of caging and harvest operations in accordance with EU and ICCAT provisions.

5.2. Mediterranean Swordfish fishery

In 2020, implementation of the ICCAT Recommendation 16-05 for Management Measures for Mediterranean Swordfish in the Framework of ICCAT was carried out. Monitoring and control of minimum sizes, by-catch limitations and closed seasons were carried out accordingly.

The fishery was closed during January, February and March. Vessels were only allowed to operate a maximum of 2,500 hooks of a minimum size of 7 cm, and minimum fish size limitations were imposed in line with ICCAT Recommendation 16-05 for management measures for Mediterranean swordfish.

6. Italy

The actions taken in 2020 by the Italian Administration in order to implement the ICCAT Bluefin tuna measures are listed below:

- D.M. 20/04/2020 n. 7398 – “Campagna di pesca del tonno rosso – Anno 2020 – Disposizioni urgenti e specifiche per i settori circuizione (PS) e palangaro (LL)”
- D.M. 08/05/2020 n. 8120 – “Campagna di pesca del tonno rosso – Anno 2020”
- D.M. 18/07/2020 n. 9010663 “Campagna di pesca del tonno rosso - Anno 2020 - Ulteriori disposizioni

Italy continued to provide the full implementation of the Regulation (EU) 2016/1627 of the European Parliament and of the Council, which had set a multi-annual recovery plan for bluefin tuna in the Eastern Atlantic and Mediterranean.

Inspection Schemes and Activities in Italy

In 2020, Italy performed all the Bluefin tuna control and monitoring activities in the context of a specific Annual Control Plan adopted by the General Headquarter of the Italian Coast Guard, in its quality of “Centro di Controllo Nazionale della Pesca”.

During 2020, 125 national ports were designated for landing Bluefin tuna. Each of these ports was covered by an ICCAT inspector present for all landing operations. Italy also took part in the Joint Deployment Plan for Bluefin tuna with all the other concerned EU Member States and the European Fisheries Control Agency (EFCA).