REPORT OF THE 2021 ICCAT SMALL TUNAS SPECIES GROUP INTERSESSIONAL MEETING
(Online 17-20 May 2021)

The results, conclusions and recommendations contained in this Report only reflect the view of the Small Tunas Species Group. Therefore, these should be considered preliminary until the SCRS adopts them at its annual Plenary meeting and the Commission revise them at its Annual meeting.

Accordingly, ICCAT reserves the right to comment, object and endorse this Report, until it is finally adopted by the Commission.

1. Opening, adoption of Agenda and meeting arrangements

The meeting was held online 17-20 May 2021. Flávia Lucena (Brazil), the Species Group ("the Group") rapporteur and meeting Chair, opened the meeting and welcomed participants. Mr. Camille Manel (ICCAT Executive Secretary) addressed the Group and welcomed the participants. The Chair proceeded to review the Agenda, which was adopted with minor changes (**Appendix 1**).

The List of Participants is included in **Appendix 2**. The List of Documents and Presentations provided at the meeting is attached as **Appendix 3**. The abstracts of all SCRS documents and presentations are included in **Appendix 4**, as presented by their authors. The following served as rapporteurs:

Sections	*Rapporteur*
Items 1, 8	M. Neves dos Santos, N.G. Taylor
Item 2	C. Palma, C. Mayor, J. Garcia
Item 3	P. Lino, S. Baibbat, F. Lucena
Item 4	G. Cardoso, T. Fredou
Item 5	F. Lucena, J. Vinas de Puig, D. Macias, R. Muñóz-Lechuga
Item 6, 7	M. Neves dos Santos, F. Lucena

2. Review of fishery statistics

The Small Tunas Species Group (hereafter Group) revised the most up-to-date information available in the ICCAT database system (ICCAT-DB) for the 13 major small tuna species (**Table 1**), namely the fishery statistics (T1NC: Task 1 nominal catches; T2CE: Task 2 catch & effort; T2SZ: Task 2 size frequencies of the samples) and the conventional tagging. The SCRS catalogues on Task 1/2 data availability for the 13 small tuna species for the period 1990 to 2019 are presented in **Appendix 5**.

The species DOL (*Coryphaena hippurus*) was finally removed from the official list of small tuna species, in line with Rec. 19-01.

2.1 Task 1 (catches) data

The Task 1 nominal catch estimations (T1NC) adopted by the Group, for the major small tuna species by year are presented in **Table 2** (cumulative catches by species in **Figure 1**). No major updates were made at the meeting to the existing catches. The Secretariat informed that very little improvements were made over the last year on the reduction of unclassified gears (current status presented in **Figure 2**), on the replacement of the SCRS carryovers by official statistics (**Figure 3**), on data gaps completion, and on historical recoveries. The small tuna species discrimination work (SMT discontinued, and KGX having now only residual catches, and the split of TUN/TUS codes by species) is as a long-term process involving the ICCAT CPCs and the Secretariat, where the progress made is always reported by the Secretariat to the Group.

A full T1NC revision provided by EU-France for the tropical fisheries (baitboat and purse seine) for the period 1991-2019, affected slightly FRI (decrease of 160 t in 2003, increase of 791 t in 2016) and LTA (increase of 144 t in 2016) with minor corrections on both species (values ±15 t / year) in various years of the series. This revision, presented at the 2021 Intersessional meeting of the Tropical Tuna Species Group, has pending the corresponding SCRS document to be presented at the 2021 Bigeye Tuna Stock Assessment meeting. In consequence, the Group adopted provisionally this French update to T1NC.

The weight of the 13 small tuna species in T1NC between 1950 and 2020 (**Table 3**) represents on average, around 16% of the totals in T1NC. By decade, there is a consistent tendency for a reduction of the weight of the small tuna species, from 31% in the 50s, to 19% in the 80s, and ending with 15% in 2010s. This evidence can have two combined causes: a) the increase of the catches of major tuna and sharks (including historical recoveries); b) the slight reduction on small tuna official statistics reported in the last two decades (since 2007 no more carryovers were made). Overall, several small tunas catch series are still incomplete. The Group reiterated the need to continue the catch series recovery work, using as a reference the small tunas SCRS catalogues (**Appendix 5**). The Secretariat reminded the Group that, Brazil, Mexico, EU-Spain and Senegal also foresee future revisions of their small tuna T1NC catch series, if required with the support of the Secretariat.

Following the ICCAT Methods Working Group recommendation (Anon., 2019) to study the possibility of extending the "scoring" methodology on fisheries data availability (Palma *et al*., 2019) to small tunas, the Secretariat presented the updated scores of small tuna species for the 30 years period 2000-2019 (overall scorecard presented in **Table 4**, containing all the major ICCAT species already scored). Except for FRI and LTA in the Atlantic (with scores above 5 on the "10 years" time series) all the other 11 cases (species/stock-area combinations) have scores below 5, which indicates absence of Task 2 datasets from the major fisheries when Task 1 exists.

The Group reiterated the proposal to split FRI and LTA Atlantic region into four regions currently considered as stocks/management units by the Group (the MED region shall be retained for LTA). The Secretariat informed that to achieve that objective, the entire FRI and LTA catch series (1950 to 2019) must have a geographical delimitation based on the billfish sampling areas (the "old" Task 1 areas have no geographical delimitation). As shown in **Figure 4**, the 70s and the 80s still have about 30% of the small tuna catches requiring this geographical allocation (unknow billfish sampling areas). As explained to the Group, this ongoing work (started in 2014 and covering all the ICCAT species) had a great progress over the last three years and is planned to be completed on the first trimester of 2022. The Secretariat presented the small tunas reclassification criteria (**Table 5**) which will facilitate the reclassification of the pending 2500 records of T1NC associated with small tunas. This is a crucial exercise to allow both FRI and LTA to be classified into 4 and 5 stocks, respectively.

Following this Group recommendation, the Blackfin tuna (BLF) with a unique Atlantic stock, the corresponding stock suffix "A+M" was replaced "ATL". There are currently no BLF catches reported for the Mediterranean Sea.

Of the total 13 species included in the Small Tunas Species Group, the seven most important ones represent about 92% of the total small tuna catches in T1NC, between 1950 and 2019. These are (by descending order of importance in weight): BON (*Sarda sarda*) with about 33% of the total catches, LTA (*Euthynnus alletteratus*) with 14%, FRI (*Auxis thazard*) with 13%, KGM (*Scomberomorus cavalla*) and SSM (*Scomberomorus maculatus*) both with 11%, and BRS (*Scomberomorus brasiliensis*) and BLT (*Auxis rochei*) with 5% each. The other six species (BLF: *Thunnus atlanticus*; MAW: *Scomberomorus tritor*; WAH: *Acanthocybium solandri*; COM: *Scomberomorus commerson*; BOP: *Orcynopsis unicolor*; CER: *Scomberomorus regalis*) represent the remainder 8% of the total small tuna catches. The Species Group KGX (*Scomberomorus* spp.) has residual catches only (less than 0.15% of total small tuna catches).

It was noted that catches (both historical and recent periods) of small tuna species (KGM, SSM, LTA, WAH,) are missing from the Gulf of Mexico, North America Atlantic coast and the Caribbean. These missing catches (together with the respective size frequencies) should be provided to ICCAT. A similar situation exists for the eastern Mediterranean and North Africa Mediterranean coast (BON, BLT and LTA). The ICCAT Secretariat should continue its efforts to recover these missing data by directly contacting the related CPCs statistical correspondents.

The Group reopened the discussion on the possibility of including in the small tuna official list of species, the species *Scomberomorus commerson* (COM, Lacepède 1800) known as "Narrow-barred Spanish mackerel", based on the historical recovery of COM catches in the Mediterranean Sea (Di Natale *et al*., 2020) presented last year. During the meeting, the Secretariat revised the ICES and EUROSTAT annual COM catches and found almost no catch information of this species. Simultaneously, FAO was also contacted on the same subject and response was given in time to be discussed at the meeting. FAO informed that the major issue is that catches of COM are often reported to FAO under Seerfishes nei (KGX). The Secretariat

compared the available data sources with the yearly COM catches (the FAO catches series of KGX reported to ICCAT during the meeting were left outside this study, for now) and presented to the Group a preliminary Task 1 on COM catches for adoption. The Group evaluated the various possibilities and agreed to give priority to the FAO catches series (National statistics reported to FAO) when more than one catch option existed. After completing a few gaps with carry overs (also available in some years and Countries in the FAO catch series), the Group finally adopted "as preliminary" the first COM Task 1 nominal catches (details in **Table 6**). These estimations were stored into the ICCAT database system (ICCAT-DB) with the respective data source identifiers (FAO, Di Natale *et al.,* 2020, carry over). The Group recalled that each catch series here adopted should be fully revised by the respective ICCAT CPC (Statistical correspondents) with the support of the ICCAT Secretariat.

Other Task 1 issues identified by the Group, such as the Italian catches of Scomberomorus tritor (MAW) reported for the Mediterranean Sea, could be in fact other small tuna species. The Group recommends that these series be revised later by EU-Italy.

No major SCRS document on fisheries statistics or biological sampling was presented during the meeting.

2.2 Task 2 (catch-effort and size samples) data

Task 2 catch and effort (T2CE) and Task 2 size information (T2SZ) availability were presented to the Group in the form of the standard SCRS catalogues on statistics (**Appendix 5**) of the major ICCAT small tuna species by stock/area, major fishery. The detailed catalogues and datasets of both T2CE and T2SZ were also made available in the meeting. The Group noted that many Task 2 gaps (missing T2CE and T2SZ) persist in these datasets across all species. The scores of small tunas (scorecard in **Table 4**) indicate the same weaknesses. Efforts should be made to recover those missing datasets. Overall, T2CE information is the most deficient Task 2 dataset.

The T2SZ of Uruguay presented at the last meeting (SCRS/P/2019/040) with WAH in South Atlantic for the period 1998-2013 shall be reported to ICCAT for the next Small Tunas Species Group intersessional meeting.

2.3 Other information (tagging)

The Secretariat provided a presentation SCRS/P/2021/032 on the progress of the ICCAT conventional tagging on small tunas (including AOTTP) with a particular focus on the tagging related activities throughout the Atlantic Ocean (i.e., tag releases, tag recoveries, time at liberty and movements). In addition, it also presented an overview of the ongoing activities on maintenance and development of the tagging database by the Secretariat, aiming for the dissemination of available data collected. Finally, information was provided related to the ongoing fieldwork (i.e., awareness campaigns and tag recovery on AOTTP project).

The Group was also informed about dashboards of the AOTTP Tagging data available in https://www.iccat.int/aottp/en/aottp-data-release.html and the AOTTP Symposium webpage where there are now available links to the presentations made (https://www.iccat.int/aottp/en/aottp-symposium.html).

The Secretariat informed the Group about a major task related to the quality control required on the small tunas conventional tagging dataset. They were already identified about 300 records with geolocation error that need to be verified and corrected in the future (in quarantine). It has been created a map (**Figure 5**) that displays those release positions with potential errors.

The Group requested the development of a database in geopackage format (gpkg) after the correction of all the existing data and maps for every species. The Secretariat informed the Group about the mid-term plans to develop the entire conventional tagging geo-referencing system. The system includes common layers inside the geopackage for all the ICCAT species, dashboards with querying facilities, and other tools developed under the AOTTP program. All this ongoing work is being made in simultaneous (highly dependent on) with the complex task that will merge the two existing conventional tagging databases (ICCAT historical and AOTTP) into a unique system. Additionally, the Secretariat has also planned to develop the electronic database module and their management tools.

The small tuna species conventional tagging summary information is presented in **Table 7** and **Figure 6** (3 maps) following the standard formats normally presented to the SCRS. The same maps by species are presented in **Figure 7** (grid species and three map types: density releases, density recoveries and apparent movement).

3. Review of available and new information on biology and other life-history information of small tunas such as stock structure

SCRS/2021/077 provided additional recent data on the presence of the Narrow-barred Spanish mackerel (*Scomberomorus commerson*) in Libya (including the eastern region) and in Palestine. The authors emphasized the importance to have this species listed by ICCAT, which was confirmed by the Secretariat that its inclusion was already approved by the SCRS last year. The author also suggested the inclusion of *S. commerson* in the ICCAT Manual for small tunas. The ICCAT Secretariat requested data from official sources to validate the relevance of this fishery and abundance of the species in the Mediterranean.

SCRS/2021/081 provided information on the biometry, growth and histology of the little tunny *Euthynnus alletteratus* captured in the bay of Mostaganem, Algeria. A total of 53 individuals, ranging from 34 to 66 cm were obtained between October 2017 and January 2018. The authors suggested to perform a more in-depth study in order to complete a seasonal cycle, which was corroborated by the group. The Group also suggested the conjoint analysis of this data with those obtained under the SMTYP for the species in the Mediterranean.

SCRS/P/2021/031 provided an update on the status of the biological parameters published on the 12 small tuna species for the 5 ICCAT areas. An extensive review of the publications did not significantly improve the status of knowledge but allowed to further clarify the gaps and research needs. The updated table and reference database was made available to the Group. The authors indicated that many of the publications used were not peer-reviewed and suggested that ICCAT should fund/manage a free online open-access peer-reviewed publication with continuous publishing of documents presented during ICCAT meetings.

Document SCRS/2021/084 described the southward expansion of the distribution and fishing grounds of blackfin tuna *Thunnus atlanticus* in the southwestern Atlantic Ocean and related this expansion with the intensification of the southward flow of the Brazil current. The authors conclude that the species distribution needs to be displaced southward until 34ºS.

The Group found the study also important for the Ecosystem Group. It was also suggested to be created opportunities for the different SCRS Officers and Group Chairs to address issues of converging mutual interest.

SCRS/P/2021/034 summarized the research activities conducted on Atlantic bonito in the Western Mediterranean by the Instituto Español de Oceanografía based both in experimental studies and icthyoplankton surveys. The studies involved the different stages in the life history although most research has been conducted in the early life stages. The authors presented an annual ichthyoplankton monitoring survey (2001-2021) during the spawning season of small tuna species (bullet tuna, bonito, little tunny, among others) in the Balearic spawning ground, in order to evaluate if the Group consider interesting to evaluate their potential use.

The Group acknowledge the availability and found the offer of great importance to potentially provide fishery independent index of spawning biomass index, and also complementary information of the species reproduction.

SCRS/P/2021/035 presented the preliminary length-weight relationships (LWRs) and relative condition factor for LTA, BON and WAH collected under the scope of the SMTYP. The results indicated that all species exhibited a negative allometric growth. A significant difference was observed between b values during the warm and cold periods for all species. The author volunteered to carry on doing this analysis and asked the contribution of the group to provide, not only for these species, but to all SMT, information on length and weight.

The Group also asked the author to provide, in a next meeting, the relationship by ICCAT stock areas.

4. Update of data poor methods and review appropriate approaches for future development of management advice for the different species

Two scientific documents were presented on data-limited approaches for small tunas.

SCRS/2021/083 presented a stock assessment of wahoo for the Southwest Atlantic Ocean area based on the best data available. The authors used a decision support tool (FishPath) in order to select the most appropriate assessment model. Two length-based assessments methods (LB-SPR and SS-DL-tool) were used compiled between 1998 and 2020. All alternative scenarios showed a very depleted stock in the recent years.

The Group pointed out that Uruguay could contribute to the dataset as it was collected size data between 1998 and 2003 (between 19ºS to 37ºS). The data were presented in 2019 but it was not included in the Task 2-size ICCAT database. The authors welcomed the contribution and indicated that an update would be applied in the future in order to improve the estimates. The Group also noted that the growth parameters were from the NW Atlantic stock, since no estimates are available for the SW Atlantic stock. The Group asked about the length-weight relationship provided since it is not in the database and could be included into the "Life history parameters and reference database" maintained by the Group.

SCRS/2021/086 presented updated life history parameters ($L\infty$, k, L_{mat50}, L_{mat95}, M) of frigate tuna in the northeast Atlantic and attempt of estimating its stock status based on data of by-catch from Russian research surveys [Atlantic branch of VNIRO (AtlantNIRO)] within Morocco, Mauritania, and Senegal waters. According to the outputs, calculated values of life history parameters do not differ significantly the results obtained before by other researchers and could be used for further analyses. The LBSPR approach was applied for the stock assessment of frigate tuna. The obtained spawning potential ratio formally indicates the status of overfishing stock. Conclusion about stock status should be used with caution. According to author point it is expected that the LBSPR method can overestimate F/M and underestimate SPR when confronted with data from a trawl gears with dome-shaped selectivity which are used in Russian resources studies.

The Group advised the author concerning the potential misidentification of the frigate and bullet tuna species, within this area. The Group also shared with the author a new tool (SS-DL tool) to consider in future SPR estimations.

5. Review status of SMTYP program to improve collaboration among scientists and obtain the information required for assessment

SCRS/P/2021/036 provided a review of the SMTYP from 2018 to 2020, giving emphasis to the last year contract. The main objectives of the 2018-2019 consortium (leaded by the Universitat de Girona) were to collect biological samples for estimating growth parameters, assessing the maturity and stock structure analysis (populations genetics) of three small tuna species (LTA, BON and WAH). For the 2020 consortium (leaded by FADURPE), the main size gaps were identified and the news goals of the project were: (a) collect biological samples to fill the specific gaps for BON and LTA; (b) Estimate growth and maturity parameters for LTA and BON, and provide preliminary results for WAH; and (c) Determine/refine the stock structure for BON, LTA and WAH. Based on the results obtained up to May, not all the objectives for 2020 could be fully met. This was mainly due to the serious constraints caused by the pandemic, specially related to the decreasing of fishery operations, closing of the research laboratories and shipping delays. However, the main gaps were identified by the area coordinators and participants (see the next papers/presentations), and should be overcome in the next contract.

SCRS/2021/081 presented the results on stock structure (genetics) of wahoo with samples obtained from 2018-2021. A total of 276 individual were analyzed from 4 locations in the Atlantic: Spain (Canary Islands); Côte d'Ivoire; Gabon and Brazil; four of these individuals were identified as *Scomberomorus cavalla* and were excluded from the analysis. No genetic differentiation was detected along the Atlantic. The authors also presented a summary of the updated work carried out for LTA and BON. The genomic analysis of Atlantic bonito is underway, waiting for the Radseq sequences in the near future. No further results were presented for this contract. The Atlantic bonito showed a clear genetic differentiation between the Northeast Atlantic and the tropical Atlantic with a putative boundary between these two genetic pools

located between the south of Morocco and Mauritania. A similar situation occurs with little tunny, with a clear and deep genetic differentiation between the same two locations described for Atlantic bonito with the boundary zone located in the south of Morocco. Samples for these two species in this intermixing zone have been collected and should be shipped soon. Finally, bullet tuna and frigate, as a potential new species to be included, and based on previous studies, the author attested that they are extremely morphological alike, and some confusion between species could occur. The authors have developed a genetic methodology for discriminating these two species.

The Group suggested the inclusion of samples of WAH from Northwest Atlantic (e.g., USA) and southern part of the Southwest Atlantic (e.g. Uruguay) in order to confirm the putative hypothesis of ah single population in the Atlantic.

SCRS/P/2021/033 provided an exploratory analysis of the reproductive parameters for *Sarda sarda* within the scope of SMTYP. 420 fish were analyzed for the preliminary analysis of L_{50} using microscopic data, and 876 fish for L_{50} estimation and determination of the spawning season, combining macroscopic and histological analysis. Data were analyzed by ICCAT areas and grouped by tentative stocks according to Viñas *et al.* (2020). Regarding the histological analysis for determing L_{50}, the Mediterranean area shows the best estimates and coverage of sizes. In contrast, more small-sized individuals are needed to better fit the logistic curve in the NE-ATL. It was not possible to adjust the logistic curve for the SE-ATL due to the narrow size range of analyzed fish. Good L_{50} estimates were obtained for the Mediterranean and NE-ATL combining microscopic/macroscopic data. However, in the NE-Atlantic area, very few small-sized individuals are still available and could bias the L_{50} estimates. For the SE-ATL, the size distribution of mature fish overlaps with the size distributions of immature ones and hence, L_{50} cannot be estimated. For NE-ATL and SE-ATL, it is necessary to increase the sampling of small-sized individuals and, specifically for SE-ATL, more large-sized individuals are also required. The temporal coverage in the Mediterranean and NE-Atlantic (from May to March) was better than in SE-Atlantic (May to October). In the Mediterranean and for stock 1 (NE-ATL + Portugal), spawning was observed from May to July and, in the NE-ATL, spawning was reported in all months, except September. In the SE-ATL, spawning was observed for all sampled months.

SCRS/2021/085 presented a specific protocol for sampling, preparing, and storing of the first dorsal fin spine that could be applied to small tunas, standardizing and improving the collection and storage procedures before processing. Information about sampling strategy, sample metadata, spine extraction, cleaning, storage and measurements were provided.

SCRS/P/2021/029 provided the growth results of Little tunny (*Euthynnus alletteratus*). A standardized methodology has been established for spines analysis of LTA comparing three transverse sections per individual. It was analyzed 159 fish and 474 processed sections were observed. Data was analyzed by genetic areas according to Viñas *et al.,* (2020). Growth differences were observed between NE-ATL+MED (including Portugal) and SE-ATL (including Senegal) specimens. Growth curve and parameters were provided for NE-ATL+MED but it was not possible for SE-ATL, given some gaps in the sampled sizes. A total of 163 otolith samples were sent for processing by Fish Ageing Services (FAS) (120 annual growth and 43 for daily growth), and the preliminary results will be provided for the next meeting. For the future, the spine analysis will be improved when size gaps are corrected, otoliths and spines structures for ageing analysis will be compared, and the results will be conjointly analysed considering the genetic, growth, reproduction and morphology information.

The Group asked if it is possible to distinguish the growth differences between the NE-ATL / MED and SE-ATL areas and, with these preliminary results, the author confirmed it is. It is necessary to carry out new analyzes such as marginal increment ratios (MIR) to confirm/deny double annulus per year.

SCRS/P/2021/030 presented the growth results of Atlantic bonito (*Sarda sarda*). As for LTA, standardized methodology has been established for spines analysis of BON, comparing three transverse sections per individual. It was analyzed 130 fish with a total of 348 processed sections observed. Not different patterns were observed by spine areas, then data was analyzed with all areas together. Growth curve and parameters estimates were provided. A total of 153 otolith samples were sent for processing by FAS (135 annual growth and 18 for daily growth). Annual analysis has been completed and the preliminary results will be provided for the next meeting. The next steps for this species are similar to the described for LTA.

Within this item of the Agenda, and considering the results provided and the gaps identified by the areas coordinators, the Chair presented some proposals for the new ToR to be evaluated by the Group. The Group agreed that the next ToR should focus on a) conduct additional sampling aiming to fill the specific gaps of the biological samples for estimating the growth and maturity parameters of BON, LTA and WAH; b) collect samples for FRI and BLT in the Atlantic and the Mediterranean Sea for stock structure studies, and partially for future studies on age and growth, and reproduction; c) refine the stock structure analysis for WAH and determinate the stock structure analysis for FRI and BLT and d) investigate genetic species differentiation between FRI and BLT. The SMTYP coordinator will provide, in the next few days, a preliminary table with the sampling size targets (and number of individuals) by species and areas to be evaluated by the area coordinators and hence the CPCs willing to participate.

6. Recommendations

For the SCRS to consider requesting that the Commission develop a process which could support funding of research programmes for periods longer than usual biannual budget period, since SMTYP, as well as other ICCAT research programmes, require multiannual and multiregional initiatives that are difficult to handle based on annual budgets. The ICCAT 2015-2020 Strategic Research Plan recognizes that such long-term commitment is essential for improving scientific advice.

Recommendations with financial implications

The Group recommended the following activities which will have financial implications in the period of 2022 to 2024 in order of priority from highest to lowest:

- Continuing support to the SMTYP: The Group recommended continuing with the ICCAT SMTYP research program activities in in 2022-2024 to further improve the biological information (improving geographical coverage for growth, maturity and stock identification) for *Acanthocybium solandri* (WAH), and beginning new sampling studies for *Auxis thazard* (FRI) and *A. rochei* (BLT). Costs for 2022 are estimated at €55,000.

- The Group recommends that a feasibility study be conducted to determine the budget and associated tagging numbers for Wahoo and LTA species. The results of this study will be presented at the Small Tunas Species Group in September 2021.

- *Regional workshop on the application of data-limited methods to assess small tuna stocks*: Data-limited models include integrated, length, and catch based models. With such tools it is possible to know the status of the population and, depending on the method used, provide reference point to the fishery. Such approaches require inputs from biologists and fisheries experts. As such, the Group recommended that an in-person workshop be held to advance with the data-limited models applied to some small tunas species. This workshop could be held immediately after (back-to-back) the 2022 intersessional meeting of the Small Tunas Species Group, which would reduce traveling costs. This workshop should be updated in 2024, also in the format back-to-back the 2024 intersessional meeting of the Small Tunas Species Group. Costs are estimated at €30,000 per workshop, which would allow for participation of 2 experts and 8-10 national scientists.

- The Commission adopted in 2019 Rec. 19-01, regarding the newICCAT list of tuna and tuna-like fishes and elasmobranchs that are oceanic, pelagic, and highly migratory. Accordingly, the Group recommended that a new chapter of the ICCAT Manual be added, on the narrow-barred Spanish mackerel (*Scomberomorus commerson*). The costs to conduct such work are estimated to be €1,000.

- *Search Engine for ICCAT Col. Vol. Sci. Pap.*: Considering the difficulties for make an easy and fast search of a document published in the ICCAT Collective Volumes of Scientific Papers, the Group recommends that the ICCAT Secretariat to implement as soon as possible the developed webpage filter-based system which, as a minimum, should include the following fields: name(s) of the author(s), title of the paper, abstract, keywords, year, volume, issue, pages of the publication and SCRS reference. Since all ICCAT publications have been fully digitized, the Group recommends that these documents to be OCRed to make the contents searchable and indexed. For that purpose, funds should be made available for hiring a dedicated staff or, as an alternative, issue a short-term contract to ensure indexing all SCRS papers published.

- *Workshop on maturity staging in 2023 to small tuna stocks*: This workshop would allow for calibration and adopting internationally-agreed macroscopic and microscopic maturity scales for the new studied small tuna species. Costs are estimated at €25,000, which would allow for participation of 1 expert and 8-10 national scientists.

The Table below contains the overall funding requests made by the Group for 2022-2024:

Small tunas	*2022*	*2023*	*2024*
Tagging, rewards and awareness			
Conventional tagging, rewarding and awareness	TBD€*	TBD€*	TBD€*
Biological studies:			
Reproduction	15,000€	25,000€	25,000€
Age and growth	15,000€	25,000€	25,000€
Genetic	15,000€	25,000€	25,000€
Sample collection and shipping	10,000€	25,000€	25,000€
Other fisheries related studies (including data recovery, etc.)		5,000€	5,000€
New chapter of ICCAT Manual (*Scomberomorus commerson*)	1,000€		
Workshops/meetings			
Workshop on application of data-limited methods	30,000€		30,000€
Workshop on maturity staging		25,000€	
Equipment			
TOTAL	86,000€*	130,000€*	135,000€*

*TBD – To be provided during the September Species Group meeting.

Other recommendations

In addition, the Group recommended:

- The Group recommended that opportunities be created, on a regular basis, for SCRS Officers or their representatives to address issues of mutual interest related to the performance and interests of the different SCRS Groups.

- Although the participation of national scientists has increased in recent years, other CPCs should make the necessary arrangements to ensure increased participation of their national scientists in the Group meetings.

- That CPCs provide indices of abundance and size-frequency sample data, preferably from fishery independent surveys and/or other national programs, which would substantially improve assessments.

- Statistical Correspondent and/or national scientists should revise, update, complete and submit their small tuna T1NC series to the Secretariat. This revision should take into account Appendix 5 (SCRS catalogues), the split of "unclassified" gear catches to specific gear codes, and the completeness of Task 1 gaps identified. The Statistical Correspondent and/or National scientists of CPCs should correct inconsistencies identified in Task 2 datasets (T2CE: catch & effort; T2SZ: size samples). In addition, for the 13 species of small tuna, the T2SZ revision should follow the SCRS recommendation on the T2SZ stratification (month, gear, 1°x1° geographical squares for surface gears /up to 5°x5° squares for longlines, SFL size classes of 1 cm in lower limits). CPCs should further improve their estimates of total catches, as there are still important gaps in the basic data available. These data are required inputs for most of the data-limited stock assessment methods.

- The Secretariat should continue its work on the data recovery and the inventory process of tagging data for small tuna species. This process will require active participation of the national scientists that hold such data.

- The application or update of data-limited assessment models and MSE for species considered of high priority, giving special attention to the input data availability and to their quality.

- The Group recommends that the SCRS create a subgroup to identify problems and solutions associated with the publication of SCRS documents being unavailable when they are retracted from publication in Redbooks. Many of these documents are not submitted to other journals or in peer-reviewed online publications, while others are published in pay-per-read journals. It would be useful to create a small informal group of volunteers from the Group to present on the subject to Species Groups and subsequently to the plenary SCRS meeting.

7. Other matters

7.1 Workplan for 2022

The Group revised the workplan for 2021 and discussed the workplan for 2022, which is included as **Appendix 6** to this report.

The Group revised the basic information to be included on the Terms of Reference (ToRs) for the new phase of the Biological studies on Small Tunas. The Group agreed that the ToRs will be provided later by the SMTYP coordinator to the Secretariat. Furthermore, it was agreed that FADURPE would remain as the contractor for the next *Short-term contract for the continuation of the Small tuna research program-biological samples collection for growth, maturity, and genetics studies*, that will be further developed within the SMTYP.

The Group agree to keep on the workplan for 2022 several activities, including the: revision of small tuna L/W relationships at stock level; update of the biological meta-database; update and/or application of the data-limit models; and proceed with the calibration and adoption of internationally agreed maturity scales for small tunas species.

Finally, the Group discussed and agreed to add a new line of activity within the SMTYP, related to continuing conventional tagging activities done during AOTTP. Particularly, it was agreed to conduct further conventional tagging of wahoo in the Canary Islands and little tunny in the Gulf of Cadiz and the Alboran Sea (Portugal and Spain), that corresponds to areas where AOTTP did not promote tagging campaigns for these species.

7.2 ICCAT manual

The Secretariat informed the Group that the first versions of 7 species sub-chapters (BON, BLT, FRI, KGM, LTA, SSM and BLF) of the ICCAT Manual (Chapter 2) have been received and already made available for revision in the three ICCAT languages, in addition to a new sub-chapter for Plain bonito (BOP). The Group agreed to provide comments on these sub-chapters by 26 May 2021. Three additional sub-chapters will be provided in early June 2021, namely for Wahoo (*Acanthocybium solandri*), Serra/Spanish mackerel (*Scomberomorus brasiliensis*) and Cero (*Scomberomorus regalis*). Feedback should be provided on these sub-chapters to the Secretariat by 15 June 2021.

All the revised and new small tuna sub-chapters shall be provided for adoption during the 2021 SCRS plenary meeting.

8. Adoption of the report and closure

The Chair informed the Group that she was going to stepdown as rapporteur of the Small Tuna Species Group to embrace new professional projects, but that she would remaing available to closely work on relevant matters related to these species. The SCRS Chair thanks Dr. Flávia Lucena for all her hard work

over the past 3 years and wished her success for her professional career. He also announced thar Dr. Constance Diaha (from Côte d'Ivoire) was invited and will now assume the Group rapporteur responsibilities. The Secretariat also thanked Dr. Lucena for her work and fruitful spirit of cooperation to elevate the quality of the scientific advice and development made in recent years within the SMTYP, and expressed to the new rapporteur its support and assistance on any matter she might need. Finally, Dr. Diaha thanked the confident of the SCRS Chair and of the Group and committed to work hard to keep the Group within the SCRS standards.

The report was adopted by the Group and the meeting was adjourned.

References

Di Natale A., Bariche M., Lahoud I., Abouelmagd N., and El Aweet A.E.A. 2020. Fisheries of narrow-barred Spanish mackerel (*Scoberomorus commerson* Lacepède, 1800) in the southern and eastern Mediterranean and relevance of the species for ICCAT. Collect. Vol. Sci. Paps. ICCAT 77(9): 85-99.

Table 1. List of small tuna species in ICCAT (changes: COM added; DOL removed).

Species code	ScieName	NameEN	NameFR	NameES	Author
BLF	*Thunnus atlanticus*	Blackfin tuna	Thon à nageoires noires	Atún des aletas negras	(Lesson 1831)
LTA	*Euthynnus alletteratus*	Little tunny	Thonine commune	Bacoreta	(Rafinesque 1810)
BON	*Sarda sarda*	Atlantic bonito	Bonite à dos rayé	Bonito del Atlántico	(Bloch 1793)
FRI	*Auxis thazard*	Frigate tuna	Auxide	Melva	(Lacepède 1800)
BOP	*Orcynopsis unicolor*	Plain bonito	Palomette	Tasarte	(Geoffroy St. Hilaire 1817)
WAH	*Acanthocybium solandri*	Wahoo	Thazard-bâtard	Peto	(Cuvier 1832)
SSM	*Scomberomorus maculatus*	Atlantic Spanish mackerel	Thazard atlantique	Carite atlántico	(Mitchill 1815)
KGM	*Scomberomorus cavalla*	King mackerel	Thazard barré	Carite lucio	(Cuvier 1829)
MAW	*Scomberomorus tritor*	West African Spanish mackerel	Thazard blanc	Carite lusitánico	(Cuvier 1832)
CER	*Scomberomorus regalis*	Cero	Thazard franc	Carite chinigua	(Bloch 1793)
BLT	*Auxis rochei*	Bullet tuna	Bonitou	Melvera (Melva)	(Risso 1810)
BRS	*Scomberomorus brasiliensis*	Serra Spanish mackerel	Thazard serra	Serra	(Collette, Russo & Zavala-Camin 1978)
COM	*Scomberomorus commerson*	Narrow-barred Spanish mackerel	Thazard rayé indo-pacifique	Carite estriado Indo-Pacífico	(Lacepède 1800)

Table 2. Overall Task 1 nominal catches (T1NC, t) of major small tuna species, by species, area, and year.

	2-Tuna (small)																TOTAL
	BON		LTA		FRI	SSM	KGM	BRS	BLT	MAW	WAH	BLF	BOP		COM	CER	
YearC	ATL	MED	ATL	MED	ATL	A+M	A+M	A+M	A+M	A+M	A+M	A+M	ATL	MED	MED	A+M	
1950	1458	483	3136	156	5527	3583	961	3000	751			300	100			100	19555
1951	1727	413	669	251	3801	4726	1645	3000	424			300	100			100	17156
1952	3334	327	2539	14	1900	4858	1393	3000	212			300	100			100	18077
1953	4486	6795	3335	44	9798	4251	1506	2900	794			300	400			100	34709
1954	2037	18436	4936	135	8734	3585	1238	3200	689			400	400			100	43890
1955	4270	56207	4250	60	6665	3845	1617	3900	1072			100	400			300	82686
1956	3166	58178	2059	94	2618	5127	2090	2900	1392			300	200			300	78424
1957	4799	44127	2236	22	5924	5410	2022	2700	32			100	100			300	67772
1958	4769	28626	3359	47	8640	6811	2313	3434	1729			500	2700			500	63427
1959	6331	11530	9660	11	6104	6005	2472	3742	90			600	1000			700	48245
1960	6366	34361	3000	13	7279	7118	2993	4479	1540			600	1000			800	69549
1961	4868	45812	2452	24	6453	7672	3199	4042	3609			400	2200			600	81331
1962	7285	7527	5089	31	4185	8355	3346	3842	3893			700	3000			600	47854
1963	5349	22837	3968	18	3568	7835	3770	3842	4310			788	3100			500	59884
1964	3342	13489	1653	48	4022	6148	3387	4496	2801			776	2300		102	600	43163
1965	4374	27004	4078	42	6888	8717	3787	3796	2604			712	216	1	804	600	63622
1966	7023	22113	3274	27	4477	10016	3545	4205	2765			662	339	1	504	600	59551
1967	7942	41206	3978	38	6972	9783	4558	3813	4628			896	684	48	303	600	85449
1968	5679	26268	3003	168	5500	12012	6055	1667	3139	1800	100	683	228	4	102	600	67008
1969	6065	55612	2599	951	13416	11180	6788	2926	2793	2700		753	1341	3	102	500	107729
1970	8002	20681	7676	960	8185	12484	6589	3368	3383	200	378	1952	806	3	102	500	75269
1971	15692	28230	4838	866	6209	10713	6520	3154	4107	1300	381	1875	683	7	31	800	85406
1972	8754	16225	2237	904	10180	11956	7465	4810	3478	2100	381	1895	310	6	223	800	71724
1973	6069	6254	1542	1061	6641	13093	9917	6946	3569	1600	280	936	102	3	344	780	59137
1974	13679	7693	4196	1304	9582	12226	13789	8750	4354	4713	391	1062	143	7	181	619	82689
1975	9571	6033	7649	1394	7886	13058	9290	5039	2644	1140	326	815	84		140	620	65689
1976	9490	6498	8373	2028	6457	12307	8442	2272	3290	1901	379	1026	212		146	565	63386
1977	11977	8697	5844	2500	16611	12218	8960	3188	3404	2572	393	1251	321	135	239	629	78939
1978	7854	9417	15129	2504	4776	11528	6944	3484	3567	6716	452	1341	817	153	211	698	75591
1979	6485	13485	11803	2870	8868	10899	11593	3722	3707	4167	760	1205	464	28	688	586	81330
1980	12568	18546	16440	2774	16960	13945	15797	5617	3952	4921	610	1175	698		239	604	114846
1981	10879	28167	14160	1446	12759	11164	18692	5841	3677	2742	2920	1973	1448		332	628	116828
1982	13456	28937	13723	2480	19755	13633	18352	6019	6043	5311	2280	1941	584		296	687	133498
1983	6998	35552	21018	1561	16662	9574	14607	6632	5820	4689	2366	1738	38		305	677	128238
1984	6918	15058	18410	1650	19746	11362	13182	8129	6337	4482	2159	1908	49		11	680	110082
1985	7149	17959	10625	2040	17753	11590	9964	3501	5240	3941	920	1403	124	9	912	574	93705
1986	6163	15428	11225	2166	15478	14207	13990	6549	5057	3180	1151	2822	86	1	527	500	98528
1987	7370	22317	18070	2424	21193	14461	13792	6212	3739	1721	1235	3462	538	26	256	392	117208
1988	20733	24028	23836	2405	20573	12671	14331	9510	6483	3811	1635	3093	1474	8	681	219	145492
1989	17671	11955	28257	2035	16411	13845	12153	10778	7110	2808	1527	2834	1109	7	1577	234	130312
1990	6811	22097	12772	2617	16738	12782	10420	7698	11994	6629	1498	3888	436	37	1393	225	118036
1991	8079	25255	9120	2315	19674	15318	13241	8856	8777	3746	1721	4202	507	101	405	375	121693
1992	6881	15111	20607	1755	11425	16285	14691	6051	5714	2423	1835	4353	465	176	463	390	108627
1993	4531	25997	11872	1258	16797	16317	16331	8049	3420	1723	2671	3535	378	252	770	450	114352
1994	6037	15682	13202	1197	13332	14490	14777	7161	5300	1278	2143	2719	615	176	688	490	99288
1995	6030	15189	10381	1894	11816	13697	14930	7006	4301	1953	2408	4051	588	115	1036	429	95827
1996	7939	17195	9453	2116	13871	16571	17782	8435	5909	2910	2516	4488	2064	132	1348	280	113007
1997	10340	14078	12804	1601	13980	15403	19815	8004	3070	1475	3104	3258	254	227	951	251	108615
1998	15523	29730	12804	2914	14332	8877	16394	7923	2309	1496	2497	3395	47	130	1087	251	119710
1999	9143	28170	9407	2876	10589	9837	17717	5754	2646	971	2972	3203	651	217	1037	1	105191
2000	5179	21972	11830	3489	8680	8220	16342	4785	3912	1321	2035	2483	1062	145	953	4	92412
2001	5400	22237	13955	2988	10151	8383	15408	4553	5796	881	2318	4034	858	154	1128	6	98250
2002	8208	15717	14080	2643	5742	9414	17258	7750	6041	1393	2226	4756	786	137	1898	1	98049
2003	3307	11117	16327	684	6096	9793	15863	5137	3794	646	2067	1303	713	23	1742	2	78614
2004	4584	11248	14918	1439	8832	8119	12830	3410	6223	352	2613	1926	573	8	1595	1	78671
2005	4391	74376	10873	1042	6154	10472	11766	3712	4231	480	2467	1031	215	2	1001	1	132213
2006	9648	31751	8320	1605	8429	6308	8252	3587	4090	571	1829	1937	32		1087	1	87446
2007	6381	8637	16472	1687	9789	6118	17936	2253	5459	847	2581	1927	875	172	1564	0	82699
2008	6772	10042	11954	2259	7861	5900	7344	3305	6825	616	2176	1669	426	107	1810	0	69065
2009	13691	10019	14170	2100	12384	6199	7826	2681	5557	684	2354	1442	442	6	1778	0	81335
2010	16338	12584	20910	2170	14215	11788	11697	1590	7952	2384	2381	1837	273	14	1625	0	107756
2011	22341	14442	21679	3668	15471	10916	10452	1055	9484	1333	2844	2083	335	42	978	2	117124
2012	8959	39321	16679	4186	18287	10156	10151	613	6234	1128	4316	2849	657	24	628	0	124188
2013	6482	18365	17010	4633	17597	12684	9712	853	7653	3016	5650	2134	641	21	520	0	106971
2014	4640	23352	10619	3605	17149	7798	11039	698	3916	1460	3526	1152	939	13	709	1	90615
2015	6712	8993	19659	6574	19415	7741	9913	389	5571	1242	2552	1306	1161	1078	790	1	93099
2016	10930	43938	22668	9788	22839	8669	10838	1124	4003	3206	17315	1920	743	62	1007	0	159051
2017	10958	11798	17395	15147	15635	8332	11257	1032	3348	1286	6871	1334	522	38	1113	0	106064
2018	11093	35491	15912	7886	12583	4332	11844	1010	4055	7066	6477	1539	104	22	1128	0	120543
2019	23964	5745	12068	9743	12907	13400	11996	831	3303	1784	4711	1388	119	52	797	1	102807

Table 3. Weight (%) of small tuna species in the total Task 1 nominal catches (T1NC, t) by decade. The 2020s decade (2020-2029) only contains 2020 incomplete and preliminary catches. Thus, the overall small tuna ratios, weighted by decade, are not affected by the inclusion of 2020s.

		Decade								TOTAL
Dimension	**Species group**	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**	**2010**	**2020**	
Catch (t)	1-Tuna (major sp.)	1009169	2390392	3678554	4853149	6112993	5077107	5560421	157416	28839200
	2-Tuna (small)	473941	685140	739160	1188736	1104346	898753	1128217	3713	6222005
	3-Tuna (other)	17657	64019	141970	104817	101846	68831	65354	2673	567167
	4-Sharks (major)	21500	43138	21413	51185	245043	504260	717304	220	1604064
	others	1207	4327	3941	7097	78343	240432	258574	506	594427
	TOTAL	1523473	3187015	4585039	6204984	7642571	6789384	7729870	164527	37826863
Ratio (%)	1-Tuna (major sp.)	66	75	80	78	80	75	72	96	76
	2-Tuna (small)	31	21	16	19	14	13	15	2	16
	3-Tuna (other)	1	2	3	2	1	1	1	2	1
	4-Sharks (major)	1	1	0	1	3	7	9	0	4
	others	0	0	0	0	1	4	3	0	2

Table 4. Overall ICCAT scorecard on data availability with small tuna species included (for future inclusion, ongoing work which splits species FRI and LTA in the Atlantic into four Atlantic regions: AT-NE, AT-SE, AT-SW, AT-NE). The stock of BLF was updated to ATL (replaces A+M).

SCORECARD on Task 1/2 availability for the main ICCAT fisheries (final year: 2019)

				SCORES (by time series)			N. flag fisheries ranked			Change (%) agains't 1989-18 (30 yrs)
FisheryID	Spc. Group	Species	Species/stock	30 years (1990-19)	20 years (2000-19)	10 years (2010-19)	30 years (1990-19)	20 years (2000-19)	10 years (2010-19)	
1	Temperate tunas	ALB	ALB-N stock	7.10	7.42	7.40	12	14	11	-1%
2			ALB-S stock	5.65	5.98	6.09	10	10	9	2%
3			ALB-M stock	2.52	3.58	6.24	11	10	7	12%
4		BFT	BFT-E stock (ATE region)	6.00	7.16	8.78	10	8	8	2%
5			BFT-E stock (MED region)	3.38	4.46	5.85	28	21	17	2%
6			BFT-W stock	8.68	8.88	9.68	9	8	7	1%
7	Tropical tunas	BET	BET-A stock (AT + MD)	6.44	7.28	7.63	29	28	27	0%
8		YFT	YFT-E region	6.53	7.48	8.00	23	20	16	0%
9			YFT-W region	4.57	5.01	5.18	25	24	22	0%
10		SKJ	SKJ-E stock	6.89	7.79	7.92	18	16	15	-1%
11			SKJ-W stock	4.09	4.70	4.44	4	4	3	-12%
12	SWO & billfish	SWO	SWO-N stock	7.87	8.66	8.62	11	10	10	4%
13			SWO-S stock	7.03	7.26	7.09	9	9	9	3%
14			SWO-M stock	4.46	5.30	6.76	11	10	8	1%
15		BUM	BUM-A stock (AT + MD)	4.08	3.91	3.58	30	30	31	-1%
16		WHM	WHM-A stock (AT + MD)	5.29	5.37	5.71	17	18	16	-1%
17		SAI	SAI-E stock	3.07	3.66	3.42	14	13	11	2%
18			SAI-W stock	3.58	3.52	4.14	18	16	11	1%
19		SPF	SPF-E stock	2.92	5.45	5.00	3	4	3	30%
20			SPF-W stock	3.28	3.71	3.19	6	6	6	-1%
21	Major shark species	BSH	BSH-N region	3.74	4.98	7.00	5	5	4	6%
22			BSH-S region	4.18	5.81	6.82	6	6	7	6%
23		POR	POR-ANE stock	0.39	0.63	1.08	8	12	11	4%
24			POR-ANW stock	2.73	2.86	3.18	4	6	8	3%
25			POR-ASE stock	0.70	1.13	2.67	4	3	2	2%
26			POR-ASW stock	0.44	0.77	1.42	6	5	3	0%
27		SMA	SMA-N region	3.02	4.55	5.95	6	7	7	9%
28			SMA-S region	3.85	6.27	7.33	7	8	6	6%
29	Small tuna species	BLF	A+M	3.04	3.72	4.05	15	12	10	1%
30		BLT	A+M	0.94	1.51	2.78	22	20	18	17%
31		BON	ATL	2.16	2.66	3.04	35	28	22	12%
32			MED	0.74	1.26	1.51	8	8	8	-11%
33		BRS	A+M	0.92	1.38	2.50	3	3	1	0%
34		FRI	ATL	4.45	5.38	5.74	28	23	21	3%
35		KGM	A+M	1.34	1.46	2.65	7	7	4	3%
36		LTA	ATL	3.77	4.67	5.26	32	25	21	4%
37			MED	0.54	0.82	1.12	18	15	12	21%
38		MAW	A+M	2.05	2.23	2.07	21	15	12	2%
39		SSM	A+M	0.50	0.00	0.00	4	3	3	-14%
40		WAH	A+M	1.71	2.24	2.13	36	28	20	1%

Table 5. Combined small tuna Task 1 nominal catches (T1NC, t) with and without Sampling Areas, by lustrum, Task 1 area, and billfish Sampling Areas. It includes the reclassification criteria of the "unknown" Sampling Areas adopted at the meeting.

				Lustrum													Reclassification criteria
Stock	Area	SampAreaCode	SAreaStatus	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015	
A+M	ADRI	BIL95	ok									119	132			52	118	ok
	AZOR	BIL94B	ok														18	ok
	CANA	BIL94B	ok								72	125	122	211	442	128	202	ok
	CVER	BIL94B	ok											675	2351	2270	1276	ok
	CVER	BIL97	ok														293	ok
	ETRO	BIL94B	ok							3186	6435	583	397	880	484	1415	1	ok
	ETRO	BIL97	ok							244	519	1035	1534	615	1864	831		ok
	ETRO	unkn	pending				4500	9565	16398	25194	10335	10958	9321	3581	1191	116		check Flag/gear
	GOFM	BIL91	ok	6500	10300	18600	28300	32910	35421	79790	71890	87862	89705	69557	53326	84358	79508	ok
	IONIA	BIL95	ok													61		ok
	LIGU	BIL95	ok													1		ok
	MDRA	BIL94B	ok											1	1	1	3	ok
	MEDI	BIL95	ok	3061	5204	18350	17822	20607	18501	27663	28230	29543	19459	24113	25188	34262	27533	ok
	NAMI	BIL97	ok													1		ok
	NE	BIL94B	ok									2445	42	4003	3459	8770	33228	ok
	NE	unkn	pending								866	4763	263	846	544	690		major BIL94B (reclassify based on Flag/gear)
	NORT	unkn	pending											2				check Flag/gear
	NW	BIL92	ok								13270	14389	13651	33909	34231	61582	63756	ok
	NW	BIL93	ok														123	ok
	NW	BIL94A	ok								43	724	1719	2030	6113	7227	6918	ok
	NW	BIL94B	ok														5	ok
	NW	BIL94C	ok														1	ok
	NW	BIL97	ok														1	ok
	NW	unkn	pending	21246	25417	26834	34426	39800	39335	32338	18385	22081	18801	416	1202	1156		major BIL92 (reclassify based on Flag/gear)
	NWC	BIL94A	ok													0		ok
	NWC	BIL94C	ok										0	0	41	60	30	ok
	S.SIC	BIL95	ok													59		ok
	SARD	BIL95	ok													1		ok
	SE	BIL97	ok					354	151	346	136	4988	462	814	1298	9062	16279	ok
	SOUT	unkn	pending											5	61			check Flag/gear
	SW	BIL96	ok		1800	5017	8919	30985	14603	32444	33600	14920	24766	22535	19627	13405	10634	ok
	TYRR	BIL95	ok													402		ok
	WEST	unkn	pending											3939		5		check Flag/gear
	WTRO	BIL93	ok	17200	20570	30437	27909	41109	44578	43496	50601	71646	71875	41779	23649	24881	17662	ok
	WTRO	BIL94A	ok												0			ok
ATL	AZOR	BIL94B	ok							74	178	129	184	122	72	75	78	ok
	CANA	BIL94B	ok					1443		15	25	18	45	9	57	83	71	ok
	CVER	BIL94B	ok							81	172	303	384	519	2304	7073	5610	ok
	CVER	BIL97	ok														2121	ok
	EAST	unkn	pending							12740					0			check Flag/gear
	ETRO	BIL94B	ok							21784	24586	3011	3676	2551	13630	21457	2998	ok
	ETRO	BIL94C	ok															ok
	ETRO	BIL97	ok	40200	10871	1927	4112	12483	6065	7632	5620	500	736	207	3480	4646	1039	ok
	ETRO	unkn	pending				20275	30742	87027	133307	125390	58801	43337	53002	40078	14827		check Flag/gear
	GOFM	BIL91	ok				100	1214	997	3094	1983	5105	9498	8797	7227	10070	11898	ok
	MDRA	BIL94B	ok						6	37	69	63	41	52	7	1	10	ok
	NE	BIL94B	ok	10849	36598	40190	21513	35088	21732	12751	10682	21763	35581	28325	31901	87886	112760	ok
	NE	unkn	pending				200				27749	2923	662	358	1328	4975		major BIL94B (reclassify based on Flag/gear)
	NORT	unkn	pending											9				check Flag/gear
	NW	BIL92	ok	659	179	14	52			104	131	265	162	4287	4068	8065	9119	ok
	NW	BIL94A	ok											19		12	69	ok
	NW	unkn	pending	409	291	452	1084	931	1246	833	811	2186	6944	18	279	8		major BIL92 (reclassify based on Flag/gear)
	NWC	BIL94A	ok														231	ok
	NWC	BIL94C	ok								34			4	10	0	282	ok
	SE	BIL94B	ok														51	ok
	SE	BIL97	ok		24111	24096	20894	9271	2823	6432	5863	43153	27917	25969	39663	62595	88682	ok
	SW	BIL96	ok	300	300	7100	12613	13807	5566	9354	16446	13558	6505	5467	2559	2319	1835	ok
	WTRO	BIL93	ok	6100	6900	6700	7233	10547	15209	15031	26099	28501	36344	11565	2617	7128	504	ok
	WTRO	BIL94A	ok														31	ok
MED	ADR.N	BIL95	ok													54		ok
	ADRI	BIL95	ok									275	160			411	315	ok
	BLACK	BIL95	ok				9302	100	114	240	14	62	145	105		132	112	ok
	IONIA	BIL95	ok													2290		ok
	LIGU	BIL95	ok													1588		ok
	MEDI	BIL95	ok	27054	198902	124159	164184	84104	55628	135931	102794	113690	116280	93894	143803	120552	155927	ok
	S.SIC	BIL95	ok													93		ok
	SARD	BIL95	ok													31		ok
	TYRR	BIL95	ok													1288		ok

Table 6. Narrow-barred Spanish mackerel (COM, *Scomberomorus commerson*) Task 1 nominal catches (T1NC, t) adopted as preliminary by the Group, by year, and flag. All catches stored as landings (Catch type = L) in the Mediterranean Sea (Sampling Area = BIL95) with unclassified gear (Gear code = UNCL).

	Species, Stock/Sarea/Gear					
	COM (Scomberomorus commerson) MED/BIL95/UNCL					TOTAL
YearC	Algerie	Egypt	Israel	NEI (MED)	Lebanon	
1964				102		102
1965				804		804
1966				504		504
1967				303		303
1968				102		102
1969				102		102
1970				102		102
1971				31		31
1972				223		223
1973				344		344
1974				181		181
1975				140		140
1976				146		146
1977				239		239
1978				211		211
1979				688		688
1980				239		239
1981				332		332
1982				296		296
1983				305		305
1984				11		11
1985	880	32				912
1986	459	68				527
1987	203	53				256
1988	625	16	40			681
1989	1528	49				1577
1990	1307	86				1393
1991	261	144				405
1992	315	112	36			463
1993	471	299				770
1994	418	270				688
1995	506	530				1036
1996	277	1071				1348
1997	357	594				951
1998	511	576				1087
1999	475	562				1037
2000	405	548				953
2001	350	778				1128
2002	597	1301				1898
2003	839	903				1742
2004	609	986				1595
2005	575	426				1001
2006		1087				1087
2007		1564				1564
2008		1810				1810
2009		1689	89			1778
2010		1578	47			1625
2011		939	39			978
2012		494	134			628
2013		478	42			520
2014		658	42		9	709
2015		699	42		49	790
2016		895	45		67	1007
2017		1019	42		52	1113
2018		1017	42		69	1128
2019		696	42		58.6	796.6

Table 7. Number of small tunas' specimens on the ICCAT conventional tagging database (ICCAT historical and AOTTP program) released and recovered. The table shows those carried out in recent years as part of the AOTTP project separately.

	RELEASES			**RECOVERIES**		
	ICCAT (1940-2013)	AOTTP (2016-2021)	TOTAL	ICCAT (1940-2013)	AOTTP (2016-2021)	TOTAL
FRI (Auxis thazard)	108	1	109		1	1
BLF (Thunnus atlanticus)	1926	7	1933	92	2	94
BLT (Auxis rochei)	29		29	15		15
BON (Sarda sarda)	541	10	551	46		46
CER (Scomberomorus regalis)	10		10	1		1
KGM (Scomberomorus cavalla)	24185		24185	1268		1268
LTA (Euthynnus alletteratus)	906	7846	8752	27	585	612
SSM (Scomberomorus maculatus)	1928		1928	2		2
WAH (Acanthocybium solandri)	158	282	440		2	2
Totals	**29791**	**8146**	**37937**	**1451**	**590**	**2041**

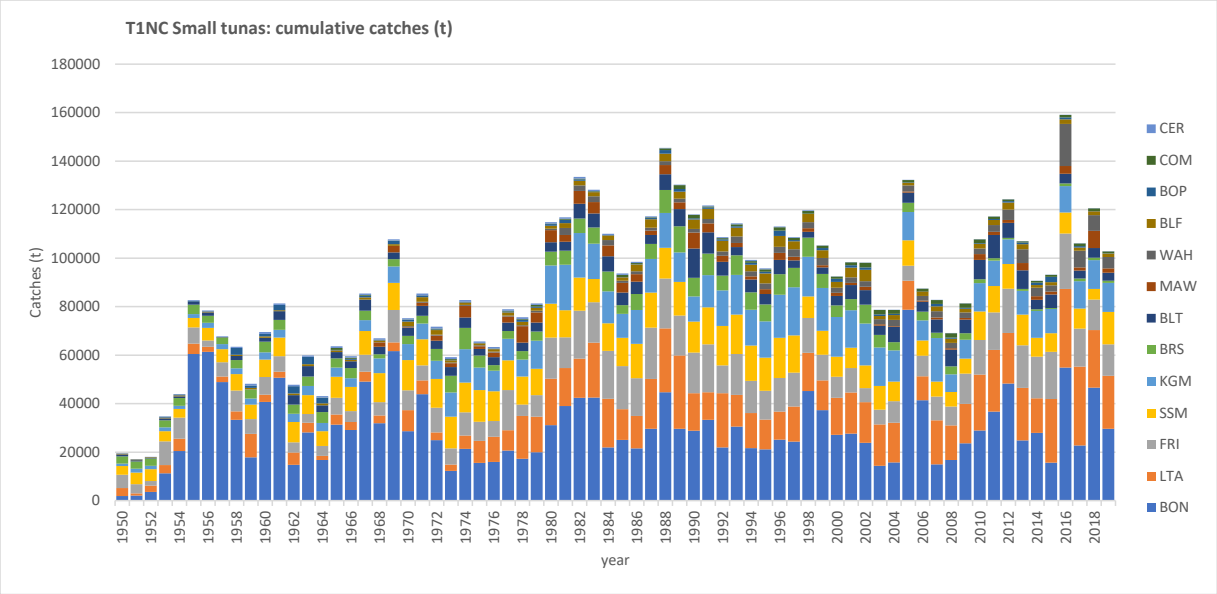


Figure 1. Cumulative small tuna caches (t) in Task 1 (T1NC) by species and year.

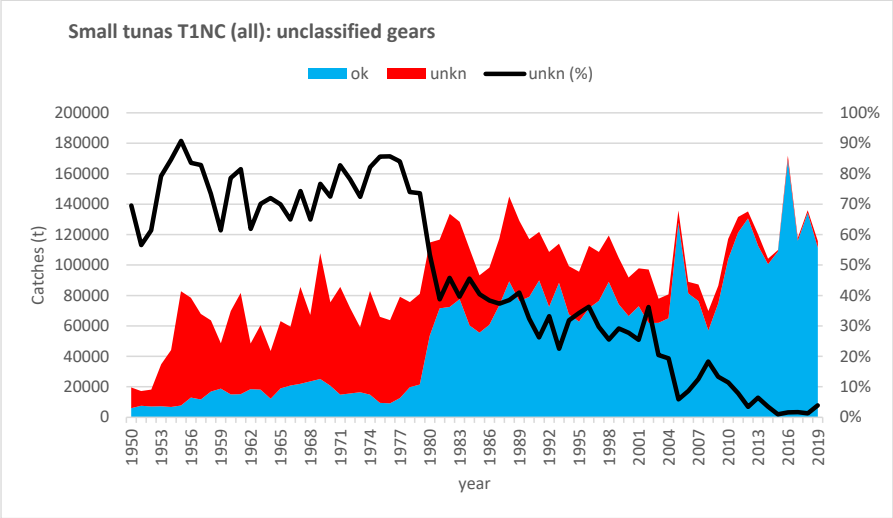


Figure 2. Total small tuna catches (t) with and without gear (UN: unclassified/unknown). The ratio (%) of unclassified gears is shown in the right axis (black line series).

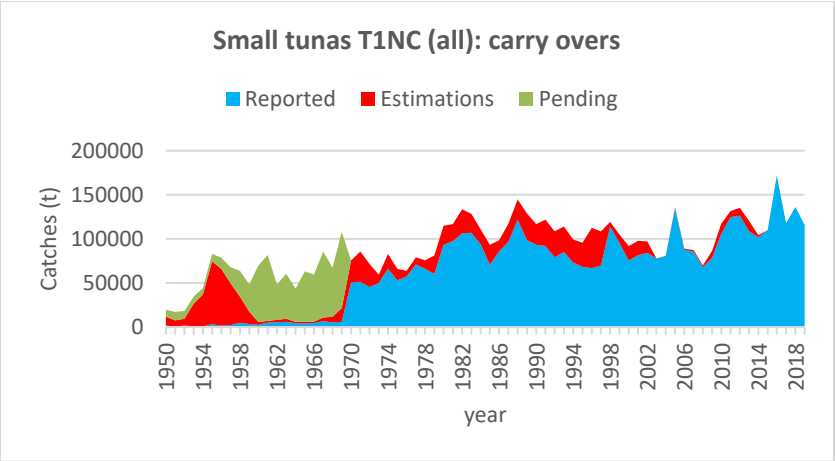


Figure 3. Total small tuna catches (t) in Task 1 (T1NC) by data origin and year. The data origin was classified in three main categories: reported by CPCs, SCRS estimations (including carry overs), and pending identification (ongoing work on identifying the data sources).

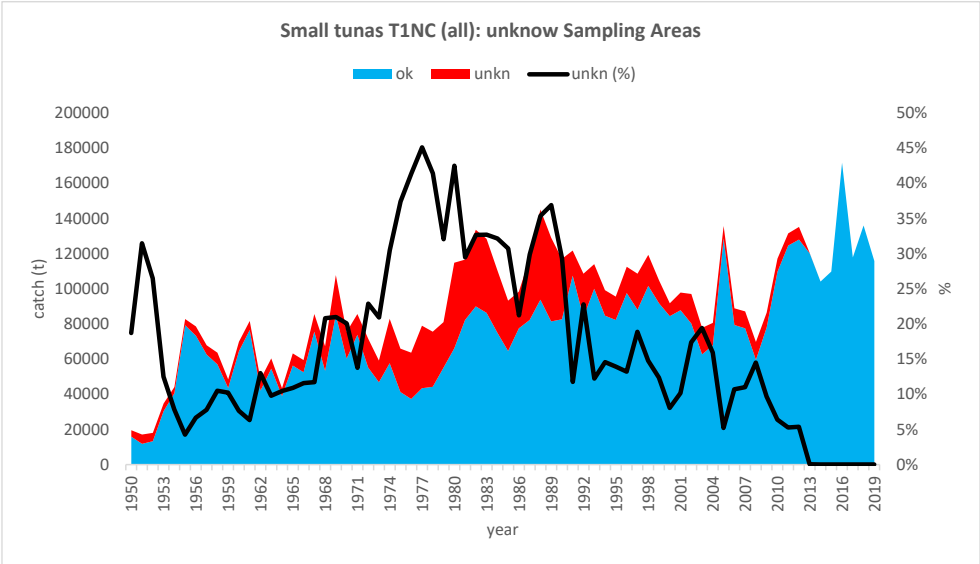


Figure 4. Total small tuna catches (t) in Task 1 (T1NC), with and without sampling areas (BIL used in small tunas), between 1950 and 2019. The ratio (%) of unclassified Sampling Areas is shown in the right axis (black line series).

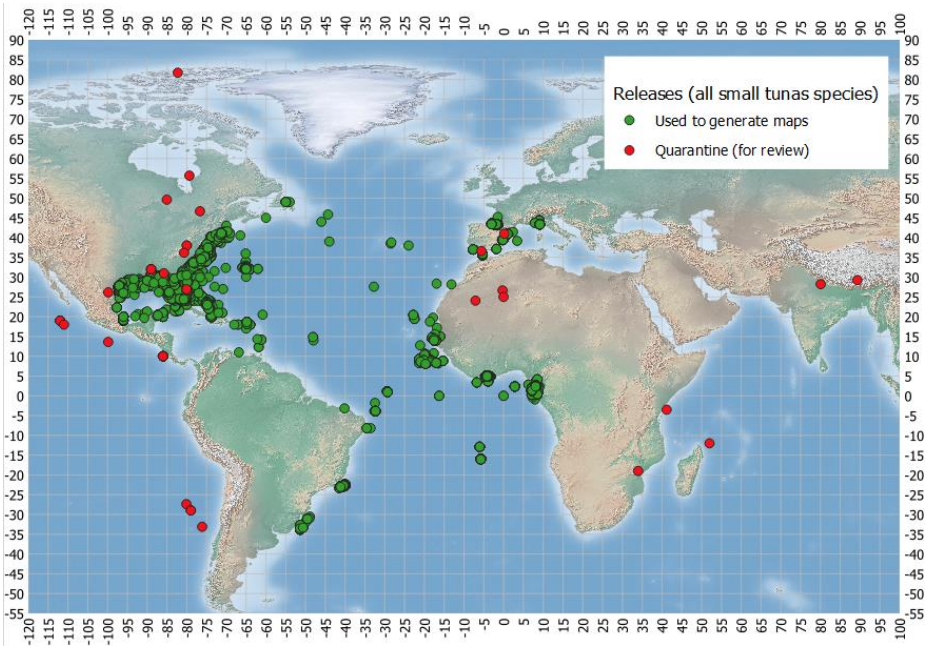


Figure 5. Points of releases in ICCAT conventional tagging on small tunas (including AOTTP) in quarantine (red points).

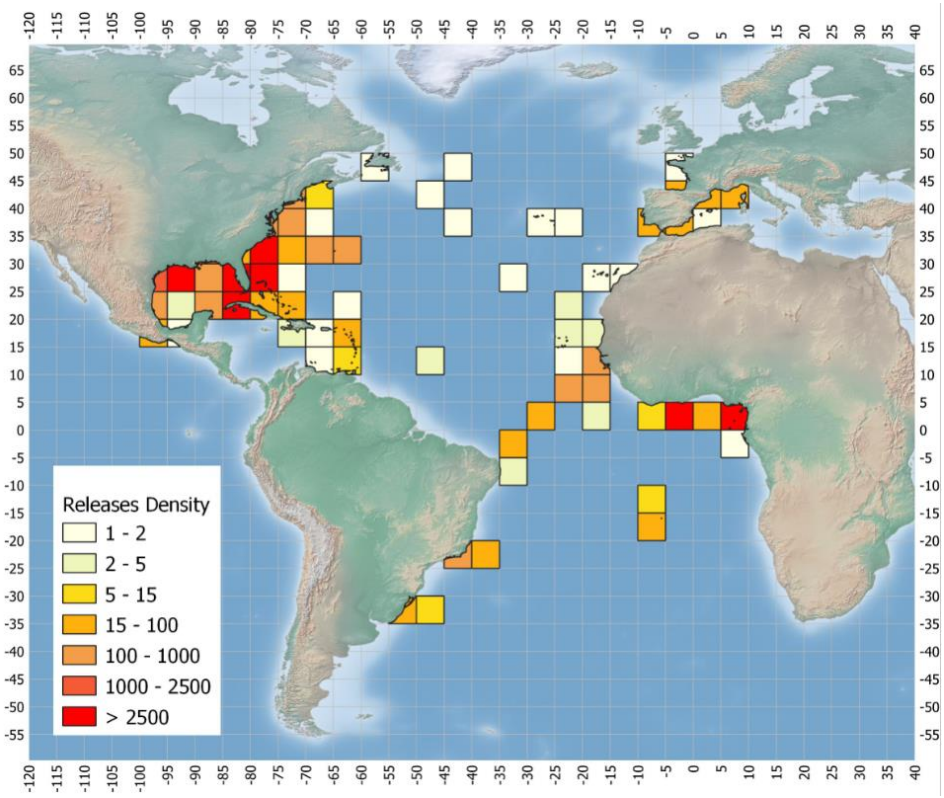


Figure 6 (A). density of the release positions at 5x5 lat lon grids (A) in ICCAT conventional tagging on small tunas (including AOTTP)

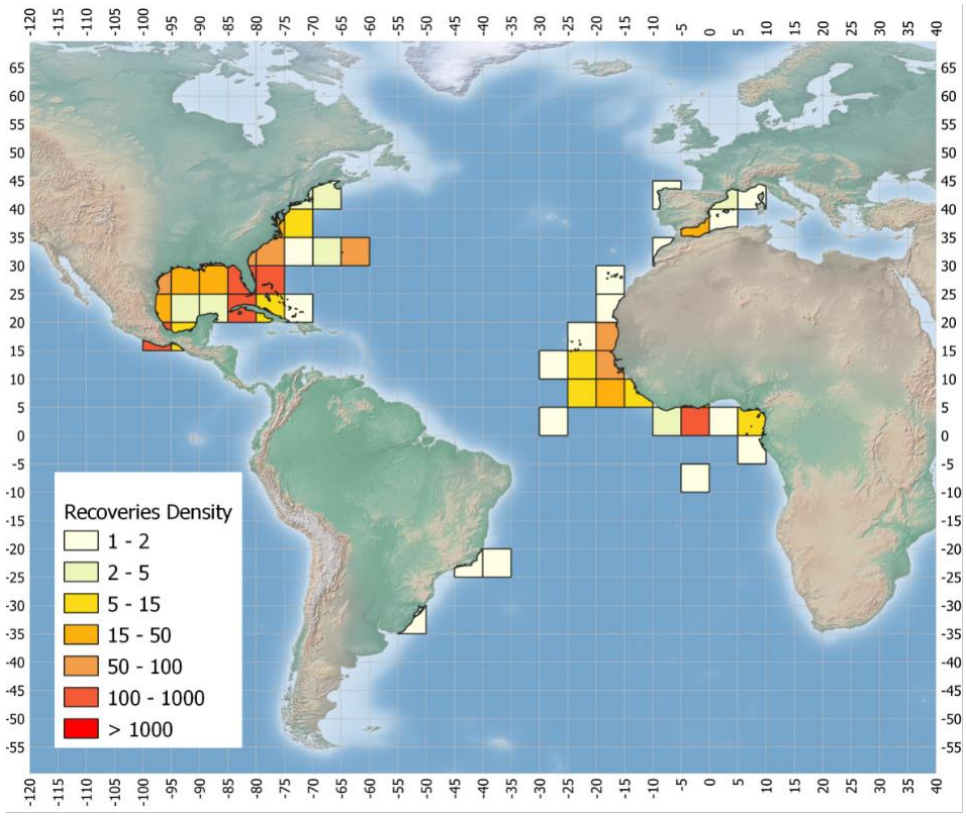


Figure 6 (B). Density of the recovery positions at 5x5 lat lon grids in ICCAT conventional tagging on small tunas (including AOTTP)

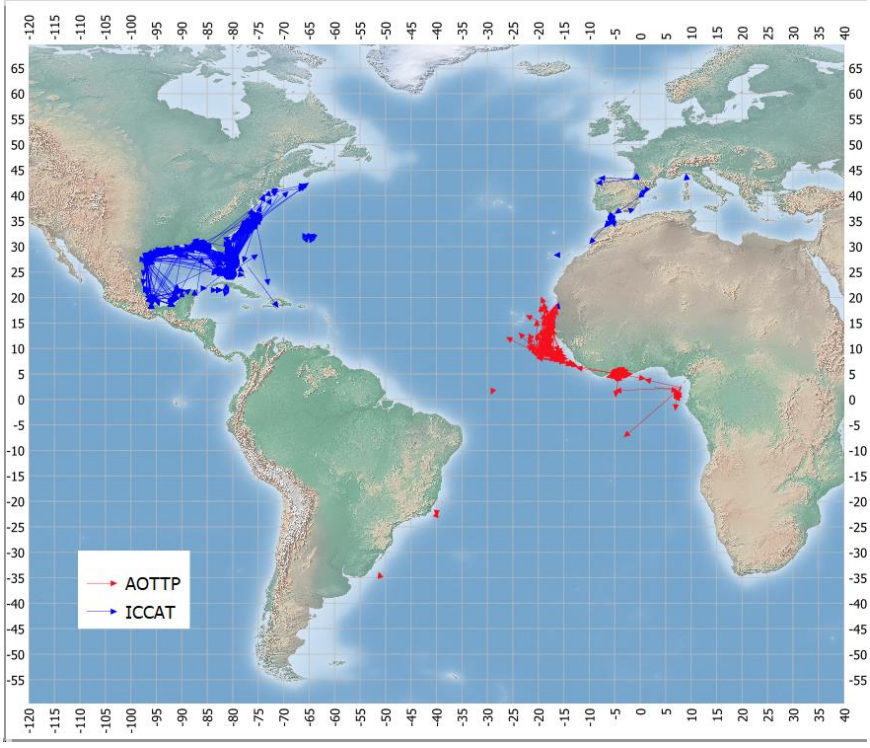
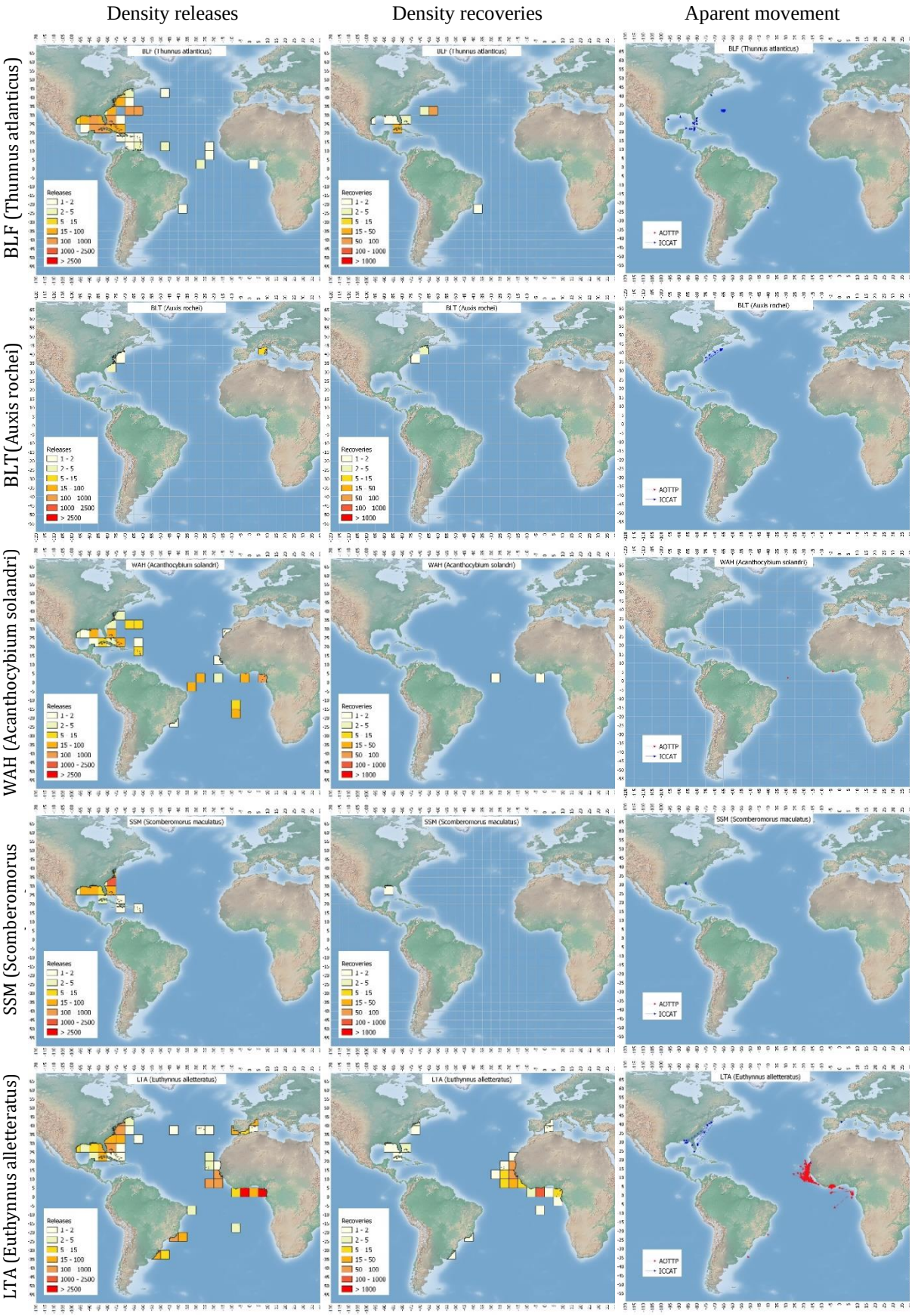


Figure 6 (C). Straight displacement from the release to the recovery position of the recaptured specimens in ICCAT conventional tagging on small tunas (including AOTTP).


Density releases
Density recoveries
Aparent movement
BLF (Thunnus atlanticus)
BLT(Auxis rochei)
WAH (Acanthocybium solandri)
SSM (Scomberomorus maculatus)
LTA (Euthynnus alletteratus)
Releases
Recoveries
1 - 2
2 - 5
5 15
15 - 100
100 1000
1000 - 2500
> 2500
50 100
100 - 1000
> 1000
AOTTP
ICCAT

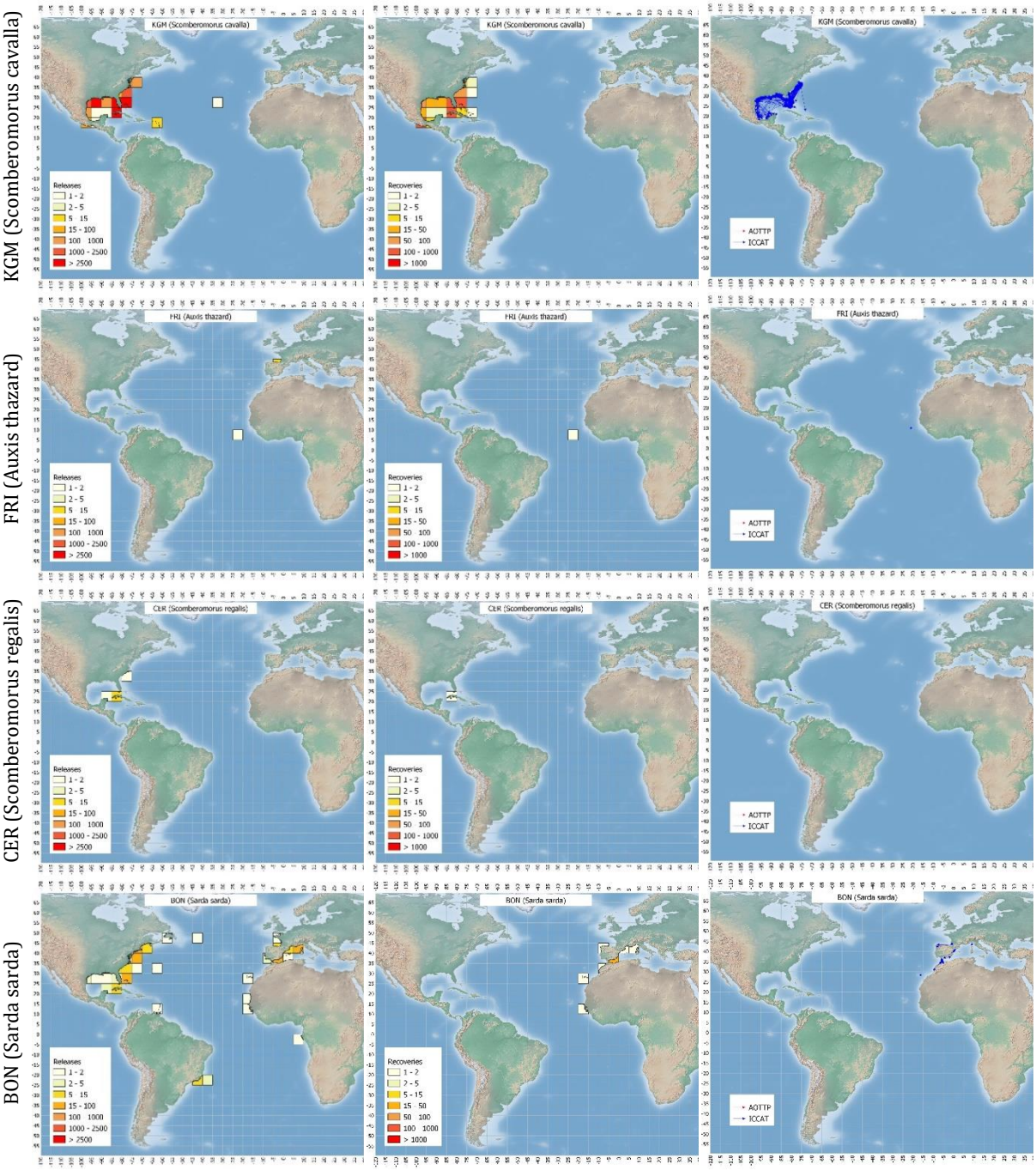


Figure 7. Maps which show the density of the release positions at 5x5 lat lon grids, density of the recovery positions at 5x5 degree strata, and a map with the straight displacement from the release to the recovery position of the recaptured specimens, respectively for each species of the group of small tunas.

Appendix 1

Agenda

1. Opening, adoption of Agenda and meeting arrangements
2. Review of fishery statistics
   2.1. Task 1 (catches) data
   2.2. Task 2 (catch-effort and size samples) data
   2.3. Other information (tagging)
   2.4. Fishery indicators (including length data analysis)
3. Review of available and new information on biology and other life-history information of small tunas such as stock structure
4. Update of Data Poor Methods and review appropriate approaches for future development of management advice for the different species
5. Review status of the Small Tunas Year programme (SMTYP) and update on data needs and analysis
6. Recommendations
7. Other matters
   7.1. ICCAT Manual
8. Adoption of the report and closure

Appendix 2

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Appendix 3

List of Papers and Presentations

Presentations	Presentations	Presentations
SCRS/2021/077	Additional data on the narrow barred Spanish mackerel (*Scomberomorus commerson*, Lacépède, 1800) in Libya and Palestine	Al Mabruk S.A.A., Di Natale A., and Zava B.
SCRS/2021/081	Etude de quelques paramètres de la biométrie, de la croissance et de l'histologie d'un thonidé mineur ; la thonine commune: *Euthynnus alletteratus* (Rafinesque, 1810), pêché dans la baie de Mostaganem	Benounnas K.,
SCRS/2021/082	Lack of genetic differentiation in the Atlantic distribution of Wahoo	Ollé J., Pascual-Alayón P.J., Angueko D., Diaha N'G.C., Lucena Frédou F., Silva G., and Viñas J.
SCRS/2021/083	From data mining to the stock assessment of the SW Atlantic wahoo *Acanthocybium solandri*	Cardoso L.G., Frédou T., Hazin F., Travassos P., Sant'Anna R., Mourato B., Silva G., Cope J., Pons M., Cardoso C., Soares A., Barreto T., and Lucena-Frédou F.
SCRS/2021/084	The southward expansion of the distribution and fishing grounds of blackfin tuna Thunnus atlanticus in the southwestern Atlantic Ocean due to increasing water temperatures	Cardoso L.G., Sant'anna R., Freire M.A., Weigert F.C., Poubel M., and Bezzerra N.
SCRS/2021/085	Protocol for sampling, preparing and storing of first dorsal fin spine for small tuna species: a first step for ageing analysis	Muñoz-Lechuga R., and Lino P.G.
SCRS/2021/086	Updated life history parameters and estimates of spawning potential ratio for frigate tuna *Auxis thazard* stock in the northeast Atlantic	Zapadaeva N.
SCRS/P/2021/029	Growth studies of Little tunny (*Euthynnus alletteratus*) for the Small Tunas Year Program	Muñoz-Lechuga R., Silva G., Lino P.G., Macias D., Saber S., Sow F.N., Diaha N'G.C., Angueko D., Hajjej G., and Lucena-Frédou F.
SCRS/P/2021/030	Growth studies of Atlantic bonito (*Sarda sarda*) for the Small Tunas Year Program	Muñoz-Lechuga R., Silva G., Lino P.G., Macias D., Saber S., Sow F.N., Diaha N'G.C., Angueko D., Hajjej G., and Lucena-Frédou F.
SCRS/P/2021/031	Life History parameters and reference databases update	Anonymous
SCRS/P/2021/032	ICCAT conventional tagging on small tunas (including AOTTP)	Secretariat
SCRS/P/2021/033	Exploratory analysis of the SMTYP database for Bonito (*Sarda sarda*) reproductive parameters estimation: preliminary results and steps to improve the analysis	Anonymous
SCRS/P/2021/034	*Sarda sarda* life cycle research in Western Mediterranean	Reglero P., Blanco E., and Ortega A.

SCRS/P/2021/035	Length-weight relationships and relative condition factor of the Wahoo *Acanthocybium solandri* (Cuvier, 1832), Little tunny *Euthynnus alletteratus* (Rafinesque 1810) and Atalntic bonito *Sarda sarda* (Bloch 1793) fish of the Atlantic Ocean	Pascual-Alayón P.J, Déniz S., Rojo V., Ramos L., and Abascal F.J.
SCRS/P/2021/036	ICCAT SMT Research program: review 2018-21 SMTYP	Lucena F., and Hazin F.

Appendix 4

SCRS Document and Presentations Abstracts as provided by the authors

SCRS/2021/077 - The presence of the Narrow-barred Spanish mackerel (*Scomberomorus commerson*) is clearly documented in the ICCAT Convention area and particularly in a large part of the Mediterranean Sea. Fishery data for the Mediterranean Sea have been available mostly in the last few decades and this paper is now providing additional recent data on this species in Libya (including the eastern region) and in Palestine. We stress again the importance to have this species listed by ICCAT and included in the Manual for small tunas, taking into account its relevance for several fisheries in the ICCAT Convention area.

SCRS/2021/081 - Ce travail (mémoire de fin d'études présenté par Mme BENABDELAZIZ Chahrazed et Mlle BOUZID Nabila pour l'obtention du diplôme de Master hydrobiologie marine et continentale, spécialité : ressources halieutiques) a permis d'apporter des éléments d'informations sur quelques paramètres de la biométrie, de la croissance et de l'histologie d'*Euthynnus alletteratus* capturée dans la baie de Mostaganem. L'étude est fondée sur un échantillonnage dans la baie de Mostaganem. Les relations calculées mettent en évidence, une allométrie minorante entre la longueur totale et la longueur fourche et aussi entre la taille et le poids. Cela exprime que la longueur totale croit moins vite que la longueur fourche et que la longueur totale (Lt) croit moins vite que le poids total (Wt). Les paramètres de croissance de Von Bertalanffy, ont été déterminés par l'étude des structures de taille. La longueur asymptotique (L∞) chez *Euthynnus alletteratus*; le coefficient de croissance (K), qui détermine la rapidité du poisson d'approcher la longueur asymptotique. L'étude histologique a permis d'une part d'étudier l'anatomie microscopique des quelques organes cibles comme le foie, les testicules, le cœur et le muscle.

SCRS/2021/082 – In this study we present the analysis of the stock structure of Wahoo (*Acanthocybium solandri*) using the mitochondrial control region as genetic marker. We analyzed 276 individuals distributed in four locations int eh east and west Atlantic. Samples were from: North East Atlantic (AT-NE/BIL94B) (Canary Islands, Spain), from South east Atlantic (AT-SE/BIL97) (Côte d'Ivoire and Gabon) and South West Atlantic (AT-SW/BIL96). Four of individuals from South West Atlantic (AT-SW/BIL96) were genetically identified as *Scomberomorus cavalla*. The genetic comparison of the four locations failed to show genetic differences. This result suggests a single genetic pool of the Wahoo in the whole Atlantic. Based on these results, ICCAT should reconsider their management strategies for this species in the area studied.

SCRS/2021/083 – The wahoo, *Acanthocybium solandri*, a widely distributed oceanic fish is one of the most important species caught in the tropical oceans. Recent attempts on assessing the Atlantic stocks were carried out in the Northeast, Northwest and the Southeast, but in general, the results were contrasting due to the use of different methodologies or different data availability. In this study, after an initial step of data gathering, a decision support tool (FishPath) was used to select the most appropriate assessment methods to assess the SWA wahoo. Two different length-based assessments methods (LB-SPR and SS-DL-tool) were selected. Data on life history was gathered from scientific literature, and size compositions were available from several sources for five years, between 1998 and 2019. The results were consistent between methods, indicating a very low stock status. The estimated SPR were higher when considering dome-shaped selectivity than when considering logistic selectivity for the years between 1998 and 2011 but agreed for the final year (0.2). The stock depletion estimates also showed a low stock status in the final year (~0.18) for both selectivity assumptions.

SCRS/2021/084 – Under the current knowledge, the blackfin tuna *Thunnus atlanticus* inhabits warm waters above the 20ºC isotherms of the western Atlantic Ocean from Cape Cod/US (40°N) to Rio de Janeiro/Brazil (22°S). The southernmost previously recorded catch for the species was at 28º 27'S in 1972. In this paper, we recorded the first landing of the species at the southernmost state of Brazil, Rio Grande do Sul, in 2019 and catches south of 34º S, a southward expansion of 6 degrees of latitude (~660 km). Using catch and effort data, we described a southward displacement of the species distribution and its fishing grounds. Since 2000, the quinquennial catches of *T. atlanticus* per trip and the frequency of landings with the species have increased for three fishing fleets (pole and line, handline and pelagic longline) in southern Brazil. The spatial distribution of the catches has moved southward mainly for the hand line fishing fleet, which is the most important for the species. The oceanography of three fishing locations recorded during the hand line trip showed that the species were in waters warmer than 21º C at the southern edge of the Brazil current

while displacing southward. In southern Brazil, sea surface temperature anomalies increased from 1960 to 2017, with a more pronounced increase since early 2000 when the values were mostly positive. The size composition of the catches indicated that almost all individuals were adults, larger than the sizes at first maturity. All the evidence supports the conclusion that the species distribution needs to be displaced southward until 34ºS and that this phenomenon may have been driven by the intensification of the southward flow of the Brazil current.

SCRS/2021/085 – This document presents a detailed and specific protocol for sampling, preparing and storing of first dorsal fin spine of small tuna species.

SCRS/2021/086 - The scientific work presents the attempt to estimate the status of Frigate tuna stock in the Northeast Atlantic. Stock status estimates were obtained based on biological data from by-catch of Russian resources studies. Analysis of Frigate tuna length composition allowed to obtain estimates of life history parameters. Bertalanffy equation parameters were calculated using the ELEFAN procedure in R (L_∞ = 48.6 cm, k = 0.48). Lengths where 50% and 95% of the fish are mature were calculated by the FSA package in R (L_{mat50} = 30.1 cm; L_{mat95} = 41.2 cm). A qualitative assessment of Frigate tuna stock status was performed based on the Length-Based Spawning Potential Ratio (LBSPR) methodology. The spawning potential ratio (SPR) was 0.26 in 2015-2016, which is below the biological target reference point and formally indicates the status of overfishing stock.

SCRS/P/2021/029 – Not provided by the authors.

SCRS/P/2021/030 – Not provided by the authors.

SCRS/P/2021/031 – Not provided by the authors.

SCRS/P/2021/032 – Not provided by the authors.

SCRS/P/2021/033 – In this study, we provided an exploratory analysis of the reproductive parameters for *Sarda sarda* within the scope of SMTYP. It was analyzed 420 fish for the preliminary analysis of L_{50} using microscopic data, and 876 fish for L50 estimation and determination of the spawning season, combining macroscopic data and histological analysis. Data were analyzed by ICCAT areas and grouped by tentative stocks according to Viñas et al. (2020). For both analyses, the L50 for the Mediterranean area shows the best estimates and coverage of sizes. In contrast, more small-sized individuals are needed to better fit the logistic curve in the NE-ATL. It was not possible to adjust the logistic curve for the SE-ATL due to the narrow size range of analyzed fish. The temporal coverage in the Mediterranean and NE-Atlantic (from May to March) was better than in SE-Atlantic (May to October). In the Mediterranean and for stock 1 (Mediterranean + Portugal), spawning was observed from May to July and, in the NE-ATL, spawning was reported in all months, except September. In the SE-ATL, spawning was observed for all sampled months.

SCRS/P/2021/034 - Not provided by the authors.

SCRS/P/2021/035 - Length-weight relationships (LWRs) and relative condition factor are of great importance in fishery assessment studies since it provided information about the growth of the fish. LWRs for 3 small tuna fish species collected from the SMT_ICCAT project in Mediterranean and Atlantic Ocean, were established, and their growth condition was evaluated. The results indicated that all species exhibited a negative allometric growth and tended to be thinner. A significant difference was observed between b values during the warm and cold periods for *Acanthocybium solandri*, *Euthynnus alletteratus* and *Sarda sarda*. The relative condition factor (Kn) fluctuated. The current study provided the first baseline data about LWRs and relative condition factor of fish species from Atlantic Ocean.

Appendix 5

Tables *a* to *m*. Small tuna species standard SCRS catalogues on statistics (Task 1 and Task 2) of the major ICCAT small tuna species by stock/area, major fishery (flag/gear combinations ranked by order of importance) and year. Only the most important fisheries (representing about 95 % of Task 1 total catch) are shown. For each data series, Task 1 (DSet= 't1', in tonnes) is visualised against its equivalent Task 2 availability (DSet= 't2') scheme. The Task 2 colour scheme, has a concatenation of characters ('a'= T2CE exists; 'b'= T2SZ exists; 'c'= CAS exists) that represents the Task 2 data availability in the ICCAT-DB. See the legend for the colour scheme pattern definitions."

Table	Species	Scie. Name	% weight in Task I (1950-2019)	Order (#)	Stock/area
a	BLF	Thunnus atlanticus	2.0	8	A+M
b	BLT	Auxis rochei	4.6	7	A+M
c	BON	Sarda sarda	33.4	1	AT
d	BON	Sarda sarda		1	MD
e	BRS	Scomberomorus brasiliensis	4.9	6	A+M
f	COM	Scomberomorus commerson	0.7	12	MD
g	FRI	Auxis thazard	12.5	3	AT
h	KGM	Scomberomorus cavalla	11.1	4	A+M
i	LTA	Euthynnus alletteratus	14.3	2	AT
j	LTA	Euthynnus alletteratus		2	MD
k	MAW	Scomberomorus tritor	2.0	9	A+M
l	SSM	Scomberomorus maculatus	11.2	5	A+M
m	WAH	Acanthocybium solandri	2.0	10	A+M
(not enough data)	BOP	Orcynopsis unicolor	0.8	11	A+M
(not enough data)	CER	Scomberomorus regalis	0.4	13	A+M

Legend (t2)	
a	t2ce
b	t2sz
c	cas
-1	no T2 data
a	t2ce only
b	t2sz only
c	cas only
bc	t2sz + cas
ab	t2ce + t2sz
ac	t2ce + cas
abc	all

Table a. SCRS catalogue: BLF[AT] (*Thunnus atlanticus*).

						TOTAL	3888	4202	4353	3535	2719	4051	4488	3258	3395	3203	2483	4034	4756	1303	1926	1031	1937	1927	1669	1442	1837	2083	2849	2134	1152	1306	1920	1334	1539	1252			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
BLF	A+M	CP	U.S.A.	RR	t1			0		389	482	518	388	469	647	568	288	420	287	365	638	191	806	402	631	594	888	946	1893	1301	551	725	1224	904	1025	724	1	24%	24%
BLF	A+M	CP	U.S.A.	RR	t2		b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	1		
BLF	A+M	CP	EU.France	UN	t1		865	1210	1170	1140	1330	1370	1040	1040	1040	1040	1040	1040	1040														14	0	0	1	2	19%	42%
BLF	A+M	CP	EU.France	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1														-1	a	-1	b	2		
BLF	A+M	CP	Venezuela	PS	t1		935	1241	1905	1007	13	621	691	415	907	844	472	891	324	204	605	121	165	742	202	291	238	416	195	155	69	76	161	25	33		3	18%	61%
BLF	A+M	CP	Venezuela	PS	t2		a	a	a	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	-1		3		
BLF	A+M	CP	Grenada	TR	t1		293	195	146	253	189	123	164	126	233	94	164	223	255	335	268	306	371	291	290	291	291	291	291	291							4	7%	68%
BLF	A+M	CP	Grenada	TR	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1							4		
BLF	A+M	CP	Venezuela	BB	t1		215	357	243	214			64	60	108		224	859	821	107	127	104	71	34	29	1	92	13	25	25	4	3	35	4		0	5	5%	73%
BLF	A+M	CP	Venezuela	BB	t2		a	-1	a	ab	ab	ab	ab	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	a	ab	ab		-1	5		
BLF	A+M	NCO	Dominican Republic	UN	t1		520	536	110	133	239	892	892	231	158	18	19																				6	5%	78%
BLF	A+M	NCO	Dominican Republic	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																				6		
BLF	A+M	CP	Brazil	UN	t1		317	74	12		6		382	297	55	55	38	149	1518				240		248	0							31	33			7	4%	82%
BLF	A+M	CP	Brazil	UN	t2		-1	-1	-1		-1		-1	-1	-1	-1	-1	-1	-1				-1		-1	-1							-1	-1			7		
BLF	A+M	NCO	Sta. Lucia	TR	t1														96	169	96	126	182	151	179	165	203	229	192	147	104	80	156	119			8	3%	85%
BLF	A+M	NCO	Sta. Lucia	TR	t2														-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1			8		
BLF	A+M	NCO	Cuba	BB	t1		487	318	196	54	223	156	287	287																							9	3%	88%
BLF	A+M	NCO	Cuba	BB	t2		-1	-1	-1	-1	-1	-1	-1	-1					b																		9		
BLF	A+M	CP	Brazil	BB	t1		16	56	35	20	31	153	265	93					151	1	118	90		233	18	10	8	40	56	18	130	0			100	50	10	2%	90%
BLF	A+M	CP	Brazil	BB	t2		-1	a	a	-1	-1	-1	-1	-1					-1	a	-1	-1		ab	-1	-1	a	-1	a	a	a	-1	a	a	a	a	10		
BLF	A+M	CP	Brazil	LL	t1		2		2	2	1		2	28								1	2	0	0		1	1	68	92	111	262	158	119	159	121	11	1%	92%
BLF	A+M	CP	Brazil	LL	t2		-1		-1	-1	-1		-1	-1						a	a	a	a	a	a	a	ab	-1	a	a	a	a	a	a	a	a	11		
BLF	A+M	CP	U.S.A.	LL	t1		51	108	123	87	10	55	49	62	43	27	24	28	22	14	13	13	10	5	4	8	10	9	10	7	11	11	8	15	16	21	12	1%	93%
BLF	A+M	CP	U.S.A.	LL	t2		ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	12		
BLF	A+M	CP	Curaçao	UN	t1		70	60	60	65	60	50	45	45	45	45	45	45	45																		13	1%	94%
BLF	A+M	CP	Curaçao	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																		13		
BLF	A+M	CP	Brazil	HL	t1																							5			58	63	38	40	133	239	14	1%	95%
BLF	A+M	CP	Brazil	HL	t2																						a	-1			a	-1	-1	a	a	a	14		
BLF	A+M	CP	Venezuela	LL	t1					3	8	3	3	23	19	348		38	66	9			1	0		0	1	2	1	0	1	1	1	4	9	4	15	1%	95%

Table b. SCRS catalogue: BLT[A+M] (*Auxis rochei*).

						TOTAL	11994	8777	5714	3420	5300	4301	5909	3070	2309	2646	3912	5796	6041	3794	6223	4231	4090	5459	6825	5557	7952	9484	6234	7653	3916	5571	4003	3348	4055	3177			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
BLT	A+M	CP	EU.España	UN	t1		855	855	570	493	702	1233	1962	408	221	527	411	750	317	495	1009	828	1027	2979	3265	607	3749	3099	1464	2418	612	213	113		27	54	1	19%	19%
BLT	A+M	CP	EU.España	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	a	a	a	a	a	ab	a	b		-1	-1	1		
BLT	A+M	CP	Turkey	PS	t1			35		324	77					316	316	316	316		284	1020	1031	993	836	1873	1081	2552	907	863	562	476	407	474	367		2	10%	29%
BLT	A+M	CP	Turkey	PS	t2			-1		-1	-1					-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		2		
BLT	A+M	CP	Algerie	PS	t1			148	220	267	247	188	202	156	245	149	178	166	306		153	201	472	437		219	109	986	983	443	914	1846	1563	192	778	362	3	8%	37%
BLT	A+M	CP	Algerie	PS	t2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1		-1	-1	a	a	a	a	a	-1	-1	-1	a	3		
BLT	A+M	CP	Maroc	GN	t1		2058	868	1157	47	1532	566	1673	555	629	463	536	232	621	246	96	5		1	7	8	6										4	7%	44%
BLT	A+M	CP	Maroc	GN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1										4		
BLT	A+M	CP	EU.Greece	UN	t1		1400	1400	1400	1400	1400	1400	1400	1400																								5	7%	51%
BLT	A+M	CP	EU.Greece	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1																								5		
BLT	A+M	CP	EU.Italy	UN	t1		494	432	305	379	531	531	229	229	229	462	462	462	2328	974	1309	627			74		74	37	55	849								6	7%	57%
BLT	A+M	CP	EU.Italy	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1			-1		-1	-1	-1	-1								6		
BLT	A+M	CP	EU.España	TP	t1		2130	1371	640	155	422	239	334	196	266	142	612	111	176			18	74	104	124	120	63	128	156	236	137	114	87	120	224	180	7	5%	63%
BLT	A+M	CP	EU.España	TP	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1			-1	-1	-1	-1	abc	abc	a	ac	ab	ab	ab	b	ab	ab	-1	7		
BLT	A+M	CP	Tunisie	UN	t1		883	883	31	20	13	14	13	32	93	45	15	2300	932	989	1760																8	5%	68%
BLT	A+M	CP	Tunisie	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																8		
BLT	A+M	CP	Russian Federation	TW	t1			2171	814								408	1028	460	122	102	139	22		23	48	67	119	366	703	352	345	336	62	125	75	9	5%	73%
BLT	A+M	CP	Russian Federation	TW	t2			-1	-1								-1	-1	-1	-1	-1	-1	-1		-1	-1	abc	abc	abc	abc	abc	ab	ab	ab	ab	abc	9		
BLT	A+M	CP	EU.España	PS	t1																											914	881	1980	523	793	10	3%	76%
BLT	A+M	CP	EU.España	PS	t2																											ab	b	b	ab	-1	10		
BLT	A+M	CP	EU.Greece	PS	t1								26	26			196	125	120	246	226	180	274	157	620	506	169	129	118	155	108	311	207	181	294	513	11	3%	79%
BLT	A+M	CP	EU.Greece	PS	t2								-1	-1			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	11		
BLT	A+M	CP	Tunisie	PS	t1		102	102	4													940	935	938	920	13	23	26	136	67	12	3%	82%
BLT	A+M	CP	Tunisie	PS	t2		-1	-1	-1													-1	-1	-1	-1	-1	-1	-1	-1	-1	12		
BLT	A+M	CP	EU.Portugal	TP	t1										28	0	313	65	48	83	296	580	510	582	168		479	363							52	13	2%	84%
BLT	A+M	CP	EU.Portugal	TP	t2							b	b	b	b	a	ab	a	ab	ab	ab	b	b	b	b	b	ab	ab	b	b	b	b	b	b	ab	13		
BLT	A+M	CP	U.S.S.R.	TW	t1		3436																														14	2%	86%
BLT	A+M	CP	U.S.S.R.	TW	t2		-1																														14		
BLT	A+M	CP	Algerie	UN	t1			9	14	19	14	11	10	5	15	9	17	22	27		41				1134	567	851									15	2%	88%
BLT	A+M	CP	Algerie	UN	t2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1				-1	-1	-1										15		
BLT	A+M	CP	Maroc	TP	t1		394	421	487	123	194	55		7	478	210	227	24																			16	2%	89%
BLT	A+M	CP	Maroc	TP	t2		-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1																			16		
BLT	A+M	CP	EU.Italy	GN	t1																					693	346	520	433						326	1	17	1%	91%
BLT	A+M	CP	EU.Italy	GN	t2																					-1	-1	-1	-1						-1	-1	17		
BLT	A+M	CP	EU.Portugal	UN	t1											239	177	142	117	148	1				143	436	175	21	38	25						4	18	1%	92%
BLT	A+M	CP	EU.Portugal	UN	t2											a	a	a	a	a	a	a			a	-1	a	a	-1	-1						a	18		
BLT	A+M	CP	Algerie	LL	t1																99	156	111	39		20	10	127	103	132	109	124	27	39	20	543	19	1%	93%
BLT	A+M	CP	Algerie	LL	t2																-1	-1	-1	-1		-1	-1	a	a	a	a	a	-1	-1	-1	a	19		
BLT	A+M	CP	Maroc	HL	t1																78	9	9	5	10	10	16	4	11	17	97	723	155		265		20	1%	94%
BLT	A+M	CP	Maroc	HL	t2																-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1		20		
BLT	A+M	CP	EU.Italy	HL	t1														124	463	481	217															21	1%	94%
BLT	A+M	CP	EU.Italy	HL	t2														-1	-1	-1	-1															21		
BLT	A+M	CP	Maroc	LL	t1																97	20	188	28	60	104	187	143	113	160	6	52	30		66		22	1%	95%
BLT	A+M	CP	Maroc	LL	t2																-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1		22		

Table c. SCRS catalogue: BON[AT] (*Sarda sarda*).

						TOTAL	6811	8079	6881	4531	6037	6030	7939	10340	15523	9143	5179	5400	8208	3307	4584	4391	9648	6381	6772	13691	16338	22341	8959	6482	4640	6711	10928	10956	11092	11294			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
BON	ATL	CP	Mauritania	TW	t1																		1296	818	1823	2363	6861	9432	3159	488	1022	2487	4790	1496	1742	1902	1	15%	15%
BON	ATL	CP	Mauritania	TW	t2																		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1		
BON	ATL	CP	Mexico	LL	t1		215	200	657	779	674	1144	1312	1312	1632	1861	1293	1113	1032	1238	1066	654	1303	1188	1113	1063	1046	1080	1447	1534	1115	1110	1188	1361	1440	1258	2	13%	28%
BON	ATL	CP	Mexico	LL	t2		-1	-1	-1	-1	-1	-1	-1	a	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2		
BON	ATL	CP	Senegal	GN	t1		112	456	218	77	395	397	862	617	689	850	183	417	435	112	134	330	707	480	700	2854	1505	2555	998	429	999	1372	473	300	840	2982	3	9%	37%
BON	ATL	CP	Senegal	GN	t2		ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	a	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	ab	ab	b	b	-1	-1	3		
BON	ATL	CP	Maroc	PS	t1		385	729	937	1167	561	659	861	1224	1479	1334	1987	1610	1936	863	936	67	102	81	120	945	61	12	24	11	1	9	170	317	971		4	8%	45%
BON	ATL	CP	Maroc	PS	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	a	-1	-1	-1	-1	-1	-1	a	a	-1	-1	-1	-1	-1	-1	-1		4		
BON	ATL	CP	Russian Federation	TW	t1			948	29						4960			574	1441	461	16	79	316	259	52	368	1042	2293	848	125	416	308	850	666	573	617	5	7%	52%
BON	ATL	CP	Russian Federation	TW	t2			-1	-1						-1			-1	-1	-1	-1	-1	-1	-1	-1	-1	abc	abc	abc	abc	abc	ab	ab	ab	ab	abc	5		
BON	ATL	CP	Venezuela	UN	t1		1514	1514	1443		1646	1646	1348	1348	1647	1596																					6	5%	57%
BON	ATL	CP	Venezuela	UN	t2		-1	-1	-1		-1	-1	-1	-1	-1	-1																					6		
BON	ATL	CP	Senegal	TR	t1		305	132	89	66	353	307	130	584	743	1610	71	103	155	76	30	137	1575	498	634	1138	105	213	221		33		350	209			7	4%	61%
BON	ATL	CP	Senegal	TR	t2		ab	a	ab	ab	ab	ab	a	ab	a	a	ab	a	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	ab	b	b	b			7		
BON	ATL	NCO	Ukraine	TW	t1				25				342	2786	1918	1114	399	231	656	30																	8	3%	64%
BON	ATL	NCO	Ukraine	TW	t2				-1				-1	-1	-1	-1	-1	-1	-1	-1																	8		
BON	ATL	CP	EU.France	UN	t1		430	820	770	1052	990	990	610	610	610	24								42	33	4	17	6	10	1	170	5	10	6	21	1	9	3%	66%
BON	ATL	CP	EU.France	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1								-1	-1	-1	-1	-1	-1	-1	ab	-1	-1	a	-1	-1	9		
BON	ATL	CP	Maroc	LL	t1																	535	996	538	806	909	22	88	140	60	62	102	420	650	1814		10	3%	69%
BON	ATL	CP	Maroc	LL	t2											a			a	a	a	a	a	a	a	a	a	ab	b	bc	abc	b	b	b	b		10		
BON	ATL	CP	Côte d'Ivoire	GN	t1											0	0	0			3		2		3	13	0	3		17	3	4	6	3510	42	2725	11	2%	72%
BON	ATL	CP	Côte d'Ivoire	GN	t2											a	a	a			a		a	a	a	a	ab	ab		ab	ab	ab	a	ab	-1	a	11		
BON	ATL	CP	EU.Latvia	TW	t1									887	318		416	396	639								1019	2231	34	48	29						12	2%	74%
BON	ATL	CP	EU.Latvia	TW	t2									-1	-1		-1	-1	-1								-1	-1	-1	-1	-1						12		
BON	ATL	CP	Senegal	HL	t1		108	10	38	29	65	27	20	88	781	96	31	24	31	8	19	17	22	42	38	38	66	109	234	85	184	339	758	717	856	1000	13	2%	76%
BON	ATL	CP	Senegal	HL	t2		ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	a	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	ab	ab	b	b	-1	-1	13		
BON	ATL	NCO	Argentina	UN	t1		1207	1794	1559	434	4	138	103			0		0	1		0	100															14	2%	78%
BON	ATL	NCO	Argentina	UN	t2		-1	-1	-1	-1	-1	-1	-1			-1		-1	-1		-1	-1															14		
BON	ATL	NCO	Togo	GN	t1																1583	1215	2298														15	2%	80%
BON	ATL	NCO	Togo	GN	t2																-1	-1	-1														15		
BON	ATL	CP	EU.Netherlands	TW	t1																			344	539	539		2047	104	1075	54	11	124	79	39	91	16	2%	82%
BON	ATL	CP	EU.Netherlands	TW	t2																			a	-1	a		-1	a	-1	a	-1	a	-1	-1	-1	16		
BON	ATL	CP	Angola	TP	t1		127	99		47	20	9	10	16		2	118	118	118					0		1458	1484	97	198	8	2					17	2%	84%
BON	ATL	CP	Angola	TP	t2		-1	-1		-1	-1	-1	-1	-1		-1	-1	-1	-1					-1		-1	-1	-1	-1	-1	-1						17		
BON	ATL	CP	Maroc	HL	t1																	246	239	178	282	478	16	16	71	18	27	63	260	450	1296		18	1%	85%
BON	ATL	CP	Maroc	HL	t2															a		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	18		
BON	ATL	CP	Trinidad and Tobago	UN	t1					17	703	169	266	220	30	117	117	56	452	188	280	81	7	16	38	68	68	14	9	16	16		16	16	16	16	19	1%	86%
BON	ATL	CP	Trinidad and Tobago	UN	t2					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	a	a	a	a	a	-1	a	a	a	a	a	-1		-1	-1	-1	-1	19		
BON	ATL	CP	EU.Portugal	PS	t1		148	181	88	57	3	22	21	3	9	22	38	20	2	2	8	3	101	64	60	28	166	195	213	123			213	209	147	262	20	1%	87%
BON	ATL	CP	EU.Portugal	PS	t2		a	a	a	a	ab	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	-1	-1			a	a	a	a	20		
BON	ATL	CP	Maroc	GN	t1		95	65	129	77	19	26	29	30	78	41	150	84	81	64	47	400	309	142	204	185	1										21	1%	88%
BON	ATL	CP	Maroc	GN	t2		-1	-1	-1	-1	-1	a	a	a	a	a	a	a	a	a	a	a	a	a	ab	a	a	a	b								21		
BON	ATL	CP	Curaçao	TW	t1																						539	539	539								22	1%	89%
BON	ATL	CP	Curaçao	TW	t2																						-1	-1	-1	-1							22		
BON	ATL	NCO	Togo	UN	t1		177	172	107	311	254	145	197	197	197	197																					23	1%	90%
BON	ATL	NCO	Togo	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																					23		
BON	ATL	CP	EU.Portugal	UN	t1			64	20	63	21	35	31	11	24	19	67	20	13	6	19			0	112	80	226	216	97	45			325	144	56	44	24	1%	90%
BON	ATL	CP	EU.Portugal	UN	t2		abc	abc	abc	a	a	a	a	a	a	a	a	a	a	a	a	a		a	a	a	a	a	-1	-1			a	a	a	a	24		
BON	ATL	CP	S. Tomé e Príncipe	PS	t1																					145	147	149	153	158	162	267	207	211	2		25	1%	91%
BON	ATL	CP	S. Tomé e Príncipe	PS	t2																					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		25		
BON	ATL	CP	U.S.A.	RR	t1		16	87	5	27	35	29	79	98	35	29	81	64	115	13	28	13	15	33	15	6	10	147	75	55	63	64	13	9	153	78	26	1%	92%
BON	ATL	CP	U.S.A.	RR	t2		ab	ab	ab	ab	ab	ab	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	b	b	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	26		
BON	ATL	CP	Angola	HL	t1																	12		931		56	57	4	8	288			0				27	1%	92%
BON	ATL	CP	Angola	HL	t2																	-1		-1		-1	-1	-1	-1	-1			-1				27		
BON	ATL	CP	EU.France	GN	t1												14		17					79	22	9	62	84	33	147	1	201	198	157	85	57	28	0%	93%
BON	ATL	CP	EU.France	GN	t2												-1		-1					-1	-1	-1	-1	-1	-1	-1	a	-1	-1	ab	-1	b	28		
BON	ATL	CP	U.S.A.	GN	t1		71	77	119	70	43		70	68	30	35	48	36	15	25	28	41	8	48	21	19	21	23	10	8	29	24	26	36	29	43	29	0%	93%
BON	ATL	CP	U.S.A.	GN	t2		-1	-1	-1	-1	-1		-1	-1	b	b	b	-1	b	-1	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	29		
BON	ATL	CP	EU.Lithuania	UN	t1		162	11	10										793																		30	0%	93%
BON	ATL	CP	EU.Lithuania	UN	t2		-1	-1	-1										-1																		30		
BON	ATL	CP	Brazil	UN	t1		226	71	86	142	142	122																171									31	0%	94%
BON	ATL	CP	Brazil	UN	t2		-1	-1	-1	-1	-1	-1																-1									31		
BON	ATL	CP	Angola	PS	t1																					429	437	29	58								32	0%	94%
BON	ATL	CP	Angola	PS	t2																					-1	-1	-1	-1								32		
BON	ATL	CP	Angola	GN	t1																	36				19	19	1	3	837			3	2			33	0%	94%
BON	ATL	CP	Angola	GN	t2																	-1				-1	-1	-1	-1	-1			-1	-1			33		
BON	ATL	NCO	Argentina	TW	t1								2	110	11	28	19	235	0	129	269	10				6	0	0	0								34	0%	95%
BON	ATL	NCO	Argentina	TW	t2								-1	-1	-1	-1	-1	-1	-1	-1	-1	-1				-1	a	a	-1								34		

Table d. SCRS catalogue: BON[MD] (*Sarda sarda*).

						TOTAL	22097	25255	15111	25997	15682	15189	17195	14078	29730	28170	21972	22237	15717	11117	11248	74376	31751	8637	10042	10019	12584	14442	39321	18365	23352	8993	43938	11798	35491	5613			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
BON	MED	CP	Turkey	PS	t1		14737	19151	8863	19548	10093	8944	10284	7810	24000	17900	12000	13460	6286	6000	5701	70797	29690	5965	6448	7036	9401	10019	35764	13158	19032	4573	39460	7578	30920		1	74%	74%
BON	MED	CP	Turkey	PS	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		1		
BON	MED	CP	EU.Greece	PS	t1		2534	2690	2690	2690	1581	2116	1752	1559	945	2135	1914	1550	1420	1538	1321	1390	845	1123	587	476	531	798	733	960	678	691	700	399	641	422	2	6%	80%
BON	MED	CP	EU.Greece	PS	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2		
BON	MED	CP	EU.Italy	UN	t1		1244	1087	1288	1238	1828	1512	2233	2233	2233	4159	4159	4159	4579	1067	1112	814			740	76	602	543		1039	442	69	110	28	220	3	3	6%	86%
BON	MED	CP	EU.Italy	UN	t2		-1	-1	-1	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	b	b	b	b		-1	-1	abc	a		abc	ab	-1	-1	-1	-1	-1	3		
BON	MED	CP	Tunisie	PS	t1																							1425	1415	1413	1407	867	1290	1993	1986	2079	4	2%	89%
BON	MED	CP	Tunisie	PS	t2																							-1	-1	-1	-1	-1	-1	-1	-1	-1	4		
BON	MED	CP	Tunisie	UN	t1		488	305	643	792	305	413	560	611	855	1350	1528	1183	1112	848	1251																5	2%	91%
BON	MED	CP	Tunisie	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																5		
BON	MED	CP	EU.España	UN	t1		672	672	218	200	341	624	681	619	313	419	321	327	448	544	272	202	420	508	453	225	457	539	420	807	520	173	103			101	6	2%	92%
BON	MED	CP	EU.España	UN	t2		a	-1	a	a	a	a	a	a	a	-1	a	a	a	-1	-1	-1	a	a	a	a	a	a	a	a	ab	a	a	ab			-1	6		
BON	MED	CP	Algerie	PS	t1			209	244	342	332	377	219	284	389	376	346	292	361		317	298	340	585		293	146	213	218	392	351	427	300	395	527	208	7	1%	94%
BON	MED	CP	Algerie	PS	t2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1		-1	-1	a	a	a	a	a	-1	-1	-1	a	7		
BON	MED	CP	Egypt	PS	t1							697	985	725	724	1442	1442	1128	1128																		8	1%	95%
BON	MED	CP	Egypt	PS	t2							-1	-1	-1	-1	-1	-1	-1	-1																		8		
BON	MED	CP	EU.Italy	LL	t1															995	874	523			243	909	160	420		206	118	60	18	68	38	20	9	1%	96%
BON	MED	CP	EU.Italy	LL	t2													b		-1	b	-1	b		-1	-1	abc	-1		abc	ab	ab	ab	ab	b	ab	9		

Table e. SCRS catalogue: BRS[A+M] (*Scomberomorus brasiliensis*).

						TOTAL	7698	8856	6051	8049	7161	7006	8435	8004	7923	5754	4785	4553	7750	5137	3410	3712	3587	2253	3305	2681	1590	1055	613	853	698	389	1124	1032	1010	831			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
BRS	A+M	CP	Trinidad and Tobago	UN	t1		2471	2749	2130	2130	2130	1816	1568	1699	2130	1328	1722	2207	2472	1867	2103	2720	1778	1414	1472	1498	1498	926	475	695	695		695	695	695	695	1	37%	37%
BRS	A+M	CP	Trinidad and Tobago	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	a	a	a	a	a	-1	a	a	a	a	a	a		-1	-1	-1	-1	1		
BRS	A+M	CP	Venezuela	UN	t1		2460	4670	2772	5077	3882	3882	3609	3609	3651	1766	1766	1766	1766																		2	32%	70%
BRS	A+M	CP	Venezuela	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																		2		
BRS	A+M	CP	Brazil	UN	t1		2767	1437	1149	842	1149	1308	3047	2125	1516	1516	988	229	3071	2881	814	471	1432	563	1521	1042											3	24%	93%
BRS	A+M	CP	Brazil	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1											3		
BRS	A+M	NCC	Guyana	GN	t1								211	571	625	1143	308	329	441	389	494	521	377	277	312	141	92	116	124	151		387	399	308	313			4	6%	100%
BRS	A+M	NCC	Guyana	GN	t2								-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1			4		
BRS	A+M	CP	Brazil	BB	t1																															92	5	0%	100%
BRS	A+M	CP	Brazil	BB	t2																															-1	5		
BRS	A+M	NCC	Chinese Taipei	LL	t1																									2	1	1	29	29			6	0%	100%
BRS	A+M	NCC	Chinese Taipei	LL	t2																									-1	-1	-1	-1	-1			6		
BRS	A+M	CP	Brazil	LL	t1																							3		0	2	1	1	1	1	43	7	0%	100%
BRS	A+M	CP	Brazil	LL	t2																							-1		-1	-1	-1	-1	-1	-1	-1	7		
BRS	A+M	CP	Trinidad and Tobago	LL	t1																							9	14	0							8	0%	100%
BRS	A+M	CP	Trinidad and Tobago	LL	t2																							-1	-1	-1							8		
BRS	A+M	CP	Brazil	PS	t1													22																			9	0%	100%
BRS	A+M	CP	Brazil	PS	t2													-1																			9		
BRS	A+M	CP	Brazil	HL	t1																									6							10	0%	100%
BRS	A+M	CP	Brazil	HL	t2																									-1							10		
BRS	A+M	CP	Grenada	LL	t1										1	1	1	0																			11	0%	100%
BRS	A+M	CP	Grenada	LL	t2										-1	-1	-1	-1																			11		
BRS	A+M	CP	Trinidad and Tobago	RR	t1															0	0				0	0	0	1	0	0	0		0	0	0	0	12	0%	100%
BRS	A+M	CP	Trinidad and Tobago	RR	t2															-1	a				a	a	a	-1	a	a	a	a	a	a	a	a	12		
BRS	A+M	CP	Angola	PS	t1																														1		13	0%	100%
BRS	A+M	CP	Angola	PS	t2																														-1		13		

Table f. SCRS catalogue: COM[MD] (*Scomberomorus commerson*).

						TOTAL	1393	405	463	770	688	1036	1348	951	1087	1037	953	1128	1898	1742	1595	1001	1087	1564	1810	1778	1625	978	628	520	709	790	1007	1113	1128	797			
Specie	Stoc	Statu	FlagName	GearG	DSe		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
COM	MED	CP	Egypt	UN	t1		86	144	112	299	270	530	1071	594	576	562	548	778	1301	903	986	426	1087	1564	1810	1689	1578	939	494	478	658	699	895	1019	1017	696	1	72%	72%
COM	MED	CP	Egypt	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1		
COM	MED	CP	Algerie	UN	t1		1307	261	315	471	418	506	277	357	511	475	405	350	597	839	609	575															2	25%	97%
COM	MED	CP	Algerie	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1															2		
COM	MED	NCO	Israel	UN	t1				36																	89	47	39	134	42	42	42	45	42	42	42	3	2%	99%
COM	MED	NCO	Israel	UN	t2				-1																	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3		
COM	MED	NCO	Lebanon	UN	t1																										9	49	67	52	69	59	4	1%	100%
COM	MED	NCO	Lebanon	UN	t2																										-1	-1	-1	-1	-1	-1	4		

Table g. SCRS catalogue: FRI[AT] (*Auxis thazard*).

						TOTAL	16738	19674	11425	16797	13332	11816	13871	13968	14332	10589	8680	10151	5738	5936	8832	6154	8429	9789	7861	12384	14215	15471	18284	17597	17149	19426	23631	15635	12583	8525			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
FRI	ATL	CP	EU.España	PS	t1		1680	10426	6199	8731	4244	4274	5440	4020	3698	3773	3385	4286	1498	2533	2450	1451	1430	2847	2237	3696	4017	3891	7292	3958	4447	4004	4842	1564	1020	1115	1	29%	29%
FRI	ATL	CP	EU.España	PS	t2		b	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	ab	a	1		
FRI	ATL	CP	EU.France	PS	t1		3872	2900	3063	5431	4146	2423	2906	1662	1794	1836	2333	2175	865	1059	1464	1185	644	684	222	708	1301	962	1426	1694	1628	1737	2474	849	775	662	2	14%	44%
FRI	ATL	CP	EU.France	PS	t2		-1	b	abc	abc	abc	abc	abc	abc	abc	b	abc	abc	abc	abc	abc	abc	b	abc	b	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	a	ab	2		
FRI	ATL	CP	Curaçao	PS	t1								590	1157	1030	1159	1122	989	710	505	474	29	205	135	521	589	233	374	452	630	1680	1151	1124	1576	1414	750	3	5%	48%
FRI	ATL	CP	Curaçao	PS	t2								ab	ab	ab	a	ab	ab	ab	ab	ab	b	ab	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	ac	ac	3		
FRI	ATL	CP	Venezuela	UN	t1		1969				2597	2597	2758	2578	1926	1524		19																				4	4%	52%
FRI	ATL	CP	Venezuela	UN	t2		-1				-1	-1	-1	-1	-1	-1		-1																				4		
FRI	ATL	NCO	Mixed flags (EU tropical)	PS	t1		1728																									4014	5117	4231			5	4%	56%
FRI	ATL	NCO	Mixed flags (EU tropical)	PS	t2		-1								b	b								b	b	b	b	b	b	b	b	-1	-1	-1			5		
FRI	ATL	CP	Panama	PS	t1			243	57	118	341	328	240	91							394	1249	1200	1600	708	699	582	569	621	738	997	292	1356	1572	707		6	4%	60%
FRI	ATL	CP	Panama	PS	t2		b	ab	a	ab	ab	ab	ab	ab	b		b	b	b		ab	ab	ab	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	abc	ac		6		
FRI	ATL	CP	Cape Verde	PS	t1										36			160	97	215	344	435	400	572	735	1482	1138	978	2077	1522	2491	362	293	146	217	169	7	4%	64%
FRI	ATL	CP	Cape Verde	PS	t2					a				a	a	a	b	ab	a	ab	ab	ab	ab	abc	abc	abc	abc	abc	abc	abc	abc	abc	ab	ab	ac	a	7		
FRI	ATL	CP	Ghana	PS	t1										33	221	118	39	31		3		1410	1344	878	1901	2580	1462	1840	1651							8	3%	67%
FRI	ATL	CP	Ghana	PS	t2			b						b	ab	a	ab	ab	ab	b	ab		b	b	b	ab	b	b	b	b	b	b	b	b			8		
FRI	ATL	CP	Cape Verde	HS	t1					5																						2031	1648	4772	2000		9	3%	70%
FRI	ATL	CP	Cape Verde	HS	t2					-1																	a	a	a	a	ab		a	-1	-1	a		9		
FRI	ATL	CP	Maroc	PS	t1		412	21	30	102	69	510	592	2653	1716	690	539	449	347	194	352	173	11	11	42	3	3	302	230	30	8	18	40	50	1		10	2%	72%
FRI	ATL	CP	Maroc	PS	t2		-1	ab	-1	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	-1	-1	-1	a	a	-1	-1	-1	-1	-1	-1	-1		10		
FRI	ATL	CP	Mauritania	TW	t1																		268	169	377	489	1420	1951	654	101	211	515	991	309	360	394	11	2%	74%
FRI	ATL	CP	Mauritania	TW	t2																		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	11		
FRI	ATL	CP	Côte d'Ivoire	GN	t1										3	0	1	821	2	31	1356	4	354	541	14	813	161	297	38	2832	261	131	310	81	2	89	12	2%	76%
FRI	ATL	CP	Côte d'Ivoire	GN	t2										a	a	a	a	a	-1	a	ab	ab	ab	a	a	ab	ab	a	ab	ab	ab	a	ab	-1	a	12		
FRI	ATL	CP	Cape Verde	HL	t1					28	4	1		7	18		9	11	181	49		5	2	6	28	18	1	5	5	1195	3195	3195				67	13	2%	79%
FRI	ATL	CP	Cape Verde	HL	t2					ab	a	ab	ab	ab	ab	ab	a	a	a	a	a	a	a	ab	a	a	a	a	a	a	a	-1				a	13		
FRI	ATL	CP	Venezuela	PS	t1		1067	1710	322	881			295	235	201	97	210	394	11	104	182	42	151	50	48	30	201	447	81	128	43	64	70	115	67	26	14	2%	80%
FRI	ATL	CP	Venezuela	PS	t2		a	a	a	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	-1	-1	14		
FRI	ATL	CP	Brazil	BB	t1		230	288	209	300	322	300	524	102	120	166	106	64	292	860	339	299	410	174	134	207	204	278	179	88	120	121	169	325	113	89	15	2%	82%
FRI	ATL	CP	Brazil	BB	t2		a	a	a	-1	a	a	a	a	a	a	-1	a	a	a	a	a	a	ab	a	a	a	a	a	-1	a	a	a	-1	a	-1	15		
FRI	ATL	CP	Russian Federation	TW	t1			647	277						1501	477	12	25	308	56	56	63	6	5	12	113	270	912	113	217	139	249	545	389	430	305	16	2%	84%
FRI	ATL	CP	Russian Federation	TW	t2			-1	-1						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	abc	abc	abc	abc	abc	ab	ab	ab	ab	abc	16		
FRI	ATL	CP	Ghana	BB	t1																		1167	790	618	885	1024	833	629	731							17	2%	86%
FRI	ATL	CP	Ghana	BB	t2									b			b						b	-1	b	b	b	b	b	b	b	b	b	b			17		
FRI	ATL	CP	Senegal	PS	t1		990	307	201	309	309	309		101																		1098	862	328	210	764	18	1%	87%
FRI	ATL	CP	Senegal	PS	t2		-1	-1	-1	-1	-1	-1		-1																		abc	abc	ac	ac	ac	18		
FRI	ATL	CP	S. Tomé e Príncipe	PS	t1												200	200	200	200	234	215	290		275	149	153	298	307	315	324	636	536	467	14	24	19	1%	89%
FRI	ATL	CP	S. Tomé e Príncipe	PS	t2												-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	19		
FRI	ATL	CP	El Salvador	PS	t1																											435	793	895	1157	1071	20	1%	90%
FRI	ATL	CP	El Salvador	PS	t2																											abc	abc	abc	ac	ac	20		
FRI	ATL	CP	Guinée Rep.	PS	t1								7									168		24	37		270	612	874	1174	677						21	1%	91%
FRI	ATL	CP	Guinée Rep.	PS	t2								a									-1		-1	-1		-1	-1	ac	ac	ac						21		
FRI	ATL	CP	Belize	PS	t1										33		115	87								100	154	71	86	78	143	266	824	586	552	655	22	1%	92%
FRI	ATL	CP	Belize	PS	t2										a		ab	ab		b						ab	b	b	b	b	ab	ab	ab	abc	-1	a	22		
FRI	ATL	CP	Russian Federation	PS	t1			431	350	150	405	456	46	500	932									1													23	1%	92%
FRI	ATL	CP	Russian Federation	PS	t2			-1	b	-1	-1	-1	-1	-1	-1									a													23		
FRI	ATL	CP	Brazil	UN	t1		362	458	82	308	584	258		2	7				770			148	186						0			1	1	16		24	1%	93%
FRI	ATL	CP	Brazil	UN	t2		-1	-1	-1	-1	-1	-1		-1	-1				-1			-1	-1						-1			-1	-1	-1		24		
FRI	ATL	CP	Maroc	GN	t1		273	703	181	84	50	40	104	9	512	74	90	27	56	38	90	13	4	1	4											25	1%	94%
FRI	ATL	CP	Maroc	GN	t2		-1	-1	-1	-1	-1	-1	-1	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a								25		
FRI	ATL	CP	U.S.S.R.	TW	t1		2198																													26	1%	94%
FRI	ATL	CP	U.S.S.R.	TW	t2		-1																													26		
FRI	ATL	CP	Guatemala	PS	t1																	142	75	167	173	134	183	73	213	42	90		71	63	311	249	27	1%	95%
FRI	ATL	CP	Guatemala	PS	t2															b	b	b	b	abc	abc	abc	abc	abc	b	b	abc	abc	abc	abc	ac	abc	27		
FRI	ATL	CP	Senegal	GN	t1		94	4	0	33	9	0	0	0	0	7	0	0	0	13	282	124	82	118	313	3	67	172	333	1	21	279					28	1%	95%

Table h. SCRS catalogue: KGM[A+M] (*Scomberomorus cavalla*).

						TOTAL	10420	13241	14691	16331	14777	14930	17782	19815	16394	17717	16342	15408	17258	15863	12830	11766	8252	17936	7344	7826	11697	10452	10151	9712	11039	9899	10834	11251	11840	11781			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
KGM	A+M	CP	U.S.A.	RR	t1		1931	6385	7073	7046	5878	5246	4731	5933	4732	3660	4448	4358	3952	4619	4619	4619					4574	3913	4289	3694	4063	4114	4455	4541	4755	4907	1	31%	31%
KGM	A+M	CP	U.S.A.	RR	t2		b	b	b	b	b	b	-1	a	a	a	a	a	a	a	a	a	a	a			-1	a	a	a	a	-1	ab	ab	ab	ab	1		
KGM	A+M	CP	Mexico	LL	t1		2689	2147	3014	3289	3097	3214	4661	4661	3583	4121	3688	4200	4453	4369	4564	3447	4201	3526	3113	3186	3040	3130	3090	3335	3019	3281	3130	3233	3825	3231	2	27%	58%
KGM	A+M	CP	Mexico	LL	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2		
KGM	A+M	CP	U.S.A.	HL	t1		167	696	620	769	928	1105	1297	1532	1335	1363	1436	1370	1402	1680	1672	1487	1823	12506	2063	3058	2635	2318	2034	1691	2179	1853	2145	2495	2311	2571	3	15%	73%
KGM	A+M	CP	U.S.A.	HL	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	3		
KGM	A+M	CP	Brazil	UN	t1		2069	959	940	1380	1365	1328	2887	2398	3595	3595	2344	200	2316	3311	247	201	315	33	0													4	7%	80%
KGM	A+M	CP	Brazil	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1												4		
KGM	A+M	CP	Venezuela	UN	t1		1069	1228	1307	800	2484	2485	2139	2139	340	2424	2424	2424	2424																			5	6%	86%
KGM	A+M	CP	Venezuela	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																			5		
KGM	A+M	CP	Trinidad and Tobago	UN	t1		424	657		1192		471	1029	875	746	447	432	410	1457	801	577	747	661	566	1043	1001	1001	720	391	494	494		494	494	494	494	6	5%	91%
KGM	A+M	CP	Trinidad and Tobago	UN	t2		-1	-1		-1		-1	-1	-1	-1	-1	-1	-1	-1	a	a	a	a	a	-1	a	a	a	a	a	a		-1	-1	-1	-1	6		
KGM	A+M	CP	U.S.A.	TR	t1		1731	830	974	740	544	371	281	540	431	447	596	561	343	375	478	559	665	655	557												7	3%	94%
KGM	A+M	CP	U.S.A.	TR	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1												7		
KGM	A+M	CP	U.S.A.	GN	t1		294	37	178	646	75	280	415	353	340	486	244	240	194	195	281	422	315	309	376	451	345	272	230	253	323	287	289	288	287	368	8	2%	96%
KGM	A+M	CP	U.S.A.	GN	t2		ab	ab	ab	b	b	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	8		
KGM	A+M	NCC	Guyana	GN	t1									270	440	398	214	239	267	390	312	245	168	326	174	91	59	75	90	99		358	314	192	143		9	1%	98%
KGM	A+M	NCC	Guyana	GN	t2									-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	9		
KGM	A+M	CP	U.S.A.	UN	t1		0	265	498	409	403	344	333	358	531	494	38	37	94	74	48	27	16	6	11	32	26	19	14	3	1	1	0	0		9	10	1%	99%
KGM	A+M	CP	U.S.A.	UN	t2		b	b	b	b	b	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	10		
KGM	A+M	NCO	Dominican Republic	UN	t1		33	34	47	52				589	288	230	226	226	226																		11	0%	99%
KGM	A+M	NCO	Dominican Republic	UN	t2		-1	-1	-1	-1				-1	-1	-1	-1	-1	-1																		11		

Table i. SCRS catalogue: LTA[AT] (*Euthynnus alletteratus*).

						TOTAL	12772	9133	20607	11872	13202	10381	9453	12804	12804	9405	11830	13955	14080	16313	14918	10873	8320	16472	11954	14170	20910	21679	16679	17011	10619	19652	22811	17395	15912	11996			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
LTA	ATL	CP	Senegal	GN	t1		3040	2362	2552	2903	2912	2577	1096	1572	2146	414	2718	4405	1752	3287	2168	1401	1360	1240	2395	4667	5244	3575	2052	5360	2864	4271	2115	1010	851	1512	1	18%	18%
LTA	ATL	CP	Senegal	GN	t2		ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	ab	ab	b	b	-1	-1	1		
LTA	ATL	CP	U.S.A.	RR	t1		21	48	30	872	1093	1237	2005	1530	1255	1145	988	1057	931	813	1141	517	1018	1051	661	836	1316	1554	2417	2058	2374	3231	2610	2109	1941	2329	2	9%	27%
LTA	ATL	CP	U.S.A.	RR	t2		ab	ab	ab	ab	ab	ab	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	b	b	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	2		
LTA	ATL	CP	Côte d'Ivoire	GN	t1		2800	100	142	339	251	253	250	155	136	9	123	1	0		153	287	426	2159	1791	1446	1631	50	1062	1426	152	89	110	1880	7583	2441	3	6%	33%
LTA	ATL	CP	Côte d'Ivoire	GN	t2		-1	-1	a	-1	-1	-1	-1	a	a	a	a	a	a		a	a	ab	ab	a	a	ab	ab	a	ab	ab	ab	a	ab	-1	a	3		
LTA	ATL	CP	Ghana	BB	t1		323	201	309	359	994	513	85	1396	250	169	255	296	2346	4099	5533	3437	451	564	312	651	401	245	589	417								4	6%	39%
LTA	ATL	CP	Ghana	BB	t2		-1	a	a	a	a	a	ab	ab	a	a	ab	a	a	a	a	a	b	b	a	-1	b	b	b	b	b	b	b	b				4		
LTA	ATL	CP	EU.España	PS	t1			361	188	707	1127	464	339	380	394	199	751	1197	209	656	997	206	213	1253	944	1181	1411	2232	1173	775	1285	2474	2542	185	148	89	5	6%	45%
LTA	ATL	CP	EU.España	PS	t2		b	ab	b	b	b	abc	abc	abc	abc	abc	b	b	b	b	b	b	b	b	b	b	abc	abc	abc	abc	abc	abc	abc	abc	ab	a	5		
LTA	ATL	CP	Senegal	TR	t1		577	423	393	708	653	593	511	873	818	556	297	210	759	896	993	650	1936	2397	2543	646	668	492	455		306		945	890	751	505	6	5%	50%
LTA	ATL	CP	Senegal	TR	t2		ab	-1	-1	-1	b	a	a	a	a	a	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	ab	b	b	b	-1	-1	6		
LTA	ATL	NCO	Mixed flags (EU tropical)	PS	t1		1152																									5722	7187	6536			7	5%	55%
LTA	ATL	NCO	Mixed flags (EU tropical)	PS	t2		-1								b	b								b	b	b	b	b	b	b	b	-1	-1	-1			7		
LTA	ATL	CP	Mauritania	TW	t1																		670	423	943	1222	3549	4878	1634	252	529	1287	2478	774	901	984	8	5%	59%
LTA	ATL	CP	Mauritania	TW	t2																		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	8		
LTA	ATL	CP	Senegal	HL	t1		566	170	192	302	668	389	364	288	408	427	320	353	148	208	337	643	530	178	168	365	376	824	224	526	519	667	1792	1791	1851	2740	9	4%	64%
LTA	ATL	CP	Senegal	HL	t2		ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	ab	ab	b	b	-1	-1	9		
LTA	ATL	CP	Ghana	PS	t1								28	629	109	137	452	434	2422	4442	1527	2301	332	771	433	1041	1064	756	685	721							10	4%	68%
LTA	ATL	CP	Ghana	PS	t2								ab	ab	ab	a	ab	ab	ab	a	a	a	b	b	ab	b	b	b	b	b	b	b	b	b			10		
LTA	ATL	CP	EU.France	PS	t1			244	424	853	1204	327	413	540	777	595	823	1192	396	710	1058	367	215	262	122	241	913	1066	705	720	571	900	1385	464	332	332	11	4%	72%
LTA	ATL	CP	EU.France	PS	t2			ac	abc	abc	abc	abc	abc	b	b	abc	abc	b	b	b	b	b	abc	b	b	b	abc	abc	abc	abc	abc	abc	abc	abc	a	ab	11		
LTA	ATL	CP	Venezuela	UN	t1		1294						1840	1840	2815	2247	2247	2247	2247																		12	4%	76%
LTA	ATL	CP	Venezuela	UN	t2		-1						-1	-1	-1	-1	-1	-1	-1																		12		
LTA	ATL	CP	Ghana	UN	t1				11299																												13	3%	79%
LTA	ATL	CP	Ghana	UN	t2				-1																												13		
LTA	ATL	CP	Brazil	UN	t1		680	777	931	985	1225	1059	834	507	920	920	605	615	615										4						23		14	2%	81%
LTA	ATL	CP	Brazil	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1										-1						-1		14		
LTA	ATL	CP	Angola	TP	t1		186	267		164	90	59	144	36	241	87	69	132	132					227		94	1306	2566	1414	46	10	1	1					15	2%	83%
LTA	ATL	CP	Angola	TP	t2		-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1					-1		b	-1	-1	-1	-1	-1	b	b					15		
LTA	ATL	CP	Senegal	PS	t1		180	528	874	811	299			1440	1340	207	207	207	207														2	150	219			16	2%	84%
LTA	ATL	CP	Senegal	PS	t2		-1	-1	-1	-1	-1			-1	-1	-1	-1	-1	-1													b	abc	ac	ac			16		
LTA	ATL	CP	Venezuela	PS	t1			1342	958	1002	1121	1121																										17	1%	86%
LTA	ATL	CP	Venezuela	PS	t2			-1	-1	-1	-1	-1																										17		
LTA	ATL	CP	Angola	HL	t1																	1		4085		4	50	99	54	323			0	4	3			18	1%	87%
LTA	ATL	CP	Angola	HL	t2																	-1		-1		-1	-1	-1	-1	-1			-1	-1	-1			18		
LTA	ATL	CP	Cape Verde	PS	t1									2	70	26	273	145	53	141	137	112	182	543	451	540	437	354	274	438	178		163	65	1	5		19	1%	88%
LTA	ATL	CP	Cape Verde	PS	t2					a		a	a	-1	a	a	ab	ab	a	ab	ab	ab	b	b	ab	b	b	b	b	b	b	b	ab	ab	ac	a		19		
LTA	ATL	CP	Venezuela	BB	t1			621	451	887	994	994																										20	1%	89%
LTA	ATL	CP	Venezuela	BB	t2			-1	-1	-1	-1	-1										b																20		
LTA	ATL	CP	Russian Federation	TW	t1														74	13							268	11	208	399	255	136	547	433	698	478	21	1%	89%
LTA	ATL	CP	Russian Federation	TW	t2														-1	-1							abc	a	abc	abc	abc	ab	ab	ab	ab	abc	21		
LTA	ATL	CP	U.S.A.	HL	t1		0	6	20	28	0		7	5	1	53	37	52	80	66	85	94	139	134	165	210	212	233	199	158	163	149	225	239	201	159	22	1%	90%
LTA	ATL	CP	U.S.A.	HL	t2		-1	-1	-1	-1	-1		-1	-1	b	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	b	-1	-1	b	b	-1	-1	b	-1	-1	22		
LTA	ATL	CP	Maroc	PS	t1		289	27	370	34	43	230	588	194	189	67	89	69	253	70	90	33		1		60	5	20	4	5	2	0	3	4			23	1%	91%
LTA	ATL	CP	Maroc	PS	t2		-1	b	-1	ab	b	b	b	b	-1	-1	b	b	b	b	b	b		-1		-1	-1	-1	-1	-1	-1	-1	-1	-1			23		
LTA	ATL	CP	Guinée Rep.	PS	t1																	15		21	2		358	260	666	1186	202						24	1%	91%
LTA	ATL	CP	Guinée Rep.	PS	t2																	-1		-1	-1		-1	-1	-1	-1	-1						24		
LTA	ATL	CP	S. Tomé e Príncipe	PS	t1												33	33	33	33	178	182	179		183	188	193	198	203	209	214	182	122	249	11	3	25	1%	92%
LTA	ATL	CP	S. Tomé e Príncipe	PS	t2												-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	25		
LTA	ATL	CP	U.S.A.	GN	t1		44	46	51	90	44		46	161	107	118	119	107	97	82	64	36	42	68	49	60	44	45	82	97	103	148	164	182	115	180	26	1%	93%
LTA	ATL	CP	U.S.A.	GN	t2		-1	-1	-1	-1	-1		-1	-1	-1	-1	b	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	26		
LTA	ATL	CP	EU.France	UN	t1											610	610	610	610								0				0		0	0			27	1%	93%
LTA	ATL	CP	EU.France	UN	t2											-1	-1	-1	-1								-1				a		-1	a			27		
LTA	ATL	CP	Panama	PS	t1					64												35	191	577	368	228	106	250	259	72	30						28	1%	94%
LTA	ATL	CP	Panama	PS	t2		b	b		ab	b	b	b	b			b	b	b		b	b	b	b	b	b	b	b	b	b	b	b	b	b			28		
LTA	ATL	CP	Liberia	UN	t1		237	237	237																		673	256	176	101	78						29	0%	94%
LTA	ATL	CP	Liberia	UN	t2		-1	-1	-1																		-1	-1	-1	-1	-1						29		
LTA	ATL	CP	U.S.A.	PS	t1		32	33						15	60	203	19	177	122	484	70	102	109	119	14	121	188	8	60									30	0%	95%
LTA	ATL	CP	U.S.A.	PS	t2		-1	-1						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1									30		
LTA	ATL	CP	Russian Federation	PS	t1			617	306	265	189	96	49		88																							31	0%	95%
LTA	ATL	CP	Russian Federation	PS	t2			-1	b	-1	-1	-1	-1		b																							31		
LTA	ATL	CP	Angola	PS	t1																					28	384	755	416									32	0%	95%

Table j. SCRS catalogue: LTA[MD] (*Euthynnus alletteratus*).

						TOTAL	2617	2315	1755	1258	1197	1894	2116	1601	2914	2876	3489	2988	2643	684	1439	1042	1605	1687	2259	2100	2170	3668	4186	4633	3605	6574	9788	15147	6883	9712			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
LTA	MED	CP	Tunisie	PS	t1																							810	800	803	798	5165	6323	12434	4032	6152	1	35%	35%
LTA	MED	CP	Tunisie	PS	t2																							-1	-1	-1	-1	-1	-1	-1	-1	-1	1		
LTA	MED	CP	Turkey	PS	t1										500	750	750	750	750		568	507	1230	785	1074	1309	1046	1437	1645	1386	682	326	184	480	617		2	16%	51%
LTA	MED	CP	Turkey	PS	t2										-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		2		
LTA	MED	CP	Tunisie	UN	t1		1911	1249	617	242	204	696	824	333	1113	752	1453	1036	960	657	633																3	12%	62%
LTA	MED	CP	Tunisie	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																3		
LTA	MED	CP	EU.Italy	PS	t1																				334	167	250	209	459	168	211		658	588	664	1217	4	5%	67%
LTA	MED	CP	EU.Italy	PS	t2																				-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	ab	4		
LTA	MED	CP	Syria	UN	t1		127	110	156	161	156	155	270	350	417	390	370	370	330					193	133	163	148	155	304	230						5	4%	71%
LTA	MED	CP	Syria	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1					-1	-1	-1	-1	-1	-1	-1						5		
LTA	MED	CP	EU.Greece	PS	t1												195	125	132			112	69	72	183	148	165	301	276	363	289	271	501	299	489	635	6	4%	76%
LTA	MED	CP	EU.Greece	PS	t2												-1	-1	-1			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	6		
LTA	MED	CP	Algerie	PS	t1			332	374	295	290	343	341	301	252	335	321	269	79		83	70	83					54	2	100	232	104	121	56	0	7	7	4%	80%
LTA	MED	CP	Algerie	PS	t2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	-1	-1					a	a	a	a	a	-1	-1	-1	a	7		
LTA	MED	NCO	NEI (MED)	UN	t1		200	200	200	200	200	200	200	200	200	200																					8	2%	82%
LTA	MED	NCO	NEI (MED)	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																					8		
LTA	MED	CP	EU.España	UN	t1							14	7	6	11		8	14	28		40	36	39	96	68	35	134	237	298	136	178	71	112			78	9	2%	83%
LTA	MED	CP	EU.España	UN	t2							a	a	a	a		a	a	a		-1	-1	a	a	a	a	a	a	a	a	a	a	a	a	-1	9		
LTA	MED	NCO	Israel	UN	t1		129	108	126	119	119	215	119	119	119	119	119	119	119																	10	2%	85%
LTA	MED	NCO	Israel	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																	10		
LTA	MED	CP	EU.España	TP	t1							1	11	3	4			67	3			225	73	50	125	47	125	177	64	78	82	140	53	82	91	112	11	2%	86%
LTA	MED	CP	EU.España	TP	t2							a	a	a	-1			a	a			-1	-1	-1	ab	abc	abc	a	abc	ab	ab	ab	ab	ab	ab	-1	11		
LTA	MED	CP	Algerie	LL	t1																27	18	57	96		48	24	43	4	56	105	96	144	385	273	235	12	2%	88%
LTA	MED	CP	Algerie	LL	t2																-1	-1	-1	-1		-1	-1	a	a	a	a	a	-1	-1	-1	a	12		
LTA	MED	CP	Egypt	PS	t1																									849	712						13	1%	89%
LTA	MED	CP	Egypt	PS	t2																									-1	-1						13		
LTA	MED	CP	EU.Italy	LL	t1															10	13	18			87	44	65	55	120	327	193		69	202	115	173	14	1%	91%
LTA	MED	CP	EU.Italy	LL	t2															-1	b	-1			-1	-1	-1	-1	-1	-1	-1		-1	ab	b	ab	14		
LTA	MED	CP	Algerie	TP	t1			130	139	144	123	121	154	106	98	139	116	102	29																	15	1%	92%
LTA	MED	CP	Algerie	TP	t2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																	15		
LTA	MED	CP	Libya	PS	t1									24	32																102	1100	48	80		16	1%	93%
LTA	MED	CP	Libya	PS	t2									-1	-1																-1	-1	-1	-1		16		
LTA	MED	CP	EU.España	PS	t1																										203	161	218	141	425	17	1%	94%
LTA	MED	CP	EU.España	PS	t2																	a									a	ab	b	ab	-1	17		
LTA	MED	CP	EU.España	LL	t1													0	1	0	0	1	3	57	19	4	40	74	79	21	40	43	59	186	14	59	18	1%	95%
LTA	MED	CP	EU.España	LL	t2				a									a	-1	-1	-1	a	a	a	ab	ab	abc	a	abc	a	ab	ab	b	ab	ab	-1	18		
LTA	MED	CP	Algerie	UN	t1			40	45	35	28	51	37	22	18	27	14	9	17		11				142	71	107									19	1%	96%
LTA	MED	CP	Algerie	UN	t2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1				-1	-1	-1									19		

Table k. SCRS catalogue: MAW[A+M] (*Scomberomorus tritor*).

						TOTAL	6629	3746	2423	1723	1278	1953	2910	1475	1496	971	1321	881	1393	646	352	480	571	847	616	684	2384	1333	1128	3016	1460	1242	3206	1286	7066	1641			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
MAW	A+M	CP	Senegal	GN	t1		870	421	1027	888	868	1477	1240	776	429	320	718	364	543	447	156	253	116	286	279	110	109	321	358	968	205	612	599				1	26%	26%
MAW	A+M	CP	Senegal	GN	t2		ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	-1	ab	a	b				1		
MAW	A+M	CP	Senegal	HL	t1		154	80	151	77	57	114	52	27	64	134	29	34	34	61	96	63	59	145	50	167	221	424	252	444	663	37	200	870	961	961	2	12%	38%
MAW	A+M	CP	Senegal	HL	t2		ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	-1	ab	a	b	-1	-1	-1	2		
MAW	A+M	CP	Côte d'Ivoire	TW	t1																		66							76		46	72	6	5657		3	11%	49%
MAW	A+M	CP	Côte d'Ivoire	TW	t2																		ab							a		-1	a	a	-1		3		
MAW	A+M	CP	Ghana	GN	t1			2778	899	466																										4	7%	56%
MAW	A+M	CP	Ghana	GN	t2			-1	-1	-1																										4		
MAW	A+M	NCO	Benin	HS	t1		211	214	202	214	194	188	188	362	511	205	205	205	205																	5	6%	62%
MAW	A+M	NCO	Benin	HS	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																	5		
MAW	A+M	CP	Mauritania	GN	t1																		198	304	172	192	209	148	143	110	432	438	221	69	81	33	6	5%	67%
MAW	A+M	CP	Mauritania	GN	t2																		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	6		
MAW	A+M	CP	Senegal	UN	t1		1215	0	0	0	0	1	1317	4	1	14	9	3	5	5	1	3	0	0		0	0	0			0						7	5%	71%
MAW	A+M	CP	Senegal	UN	t2		-1	a	a	a	a	a	-1	a	a	a	a	a	a	a	a	a	a	a		a	-1	a			a						7		
MAW	A+M	CP	Angola	TP	t1																					64	1227	185	164	224							8	3%	74%
MAW	A+M	CP	Angola	TP	t2																					-1	-1	-1	-1	-1							8		
MAW	A+M	CP	Ghana	UN	t1		1500																														9	3%	77%
MAW	A+M	CP	Ghana	UN	t2		-1																														9		
MAW	A+M	CP	Senegal	PS	t1									209	356	209	209	209	209																		10	2%	80%
MAW	A+M	CP	Senegal	PS	t2									-1	-1	-1	-1	-1	-1																		10		
MAW	A+M	CP	U.S.S.R.	TW	t1		1240																														11	2%	82%
MAW	A+M	CP	U.S.S.R.	TW	t2		-1																														11		
MAW	A+M	CP	U.S.S.R.	UN	t1		1032																														12	2%	84%
MAW	A+M	CP	U.S.S.R.	UN	t2		-1																														12		
MAW	A+M	CP	Côte d'Ivoire	GN	t1																2		0		0	1				5	35	0	3	116	169	601	13	2%	85%
MAW	A+M	CP	Côte d'Ivoire	GN	t2																a		a	a	a	a				ab	b	ab	a	a	-1	a	13		
MAW	A+M	CP	S. Tomé e Príncipe	PS	t1												6	6	6	6	21	12	13		91	93	96	98	100	102	105	13	11	72		0	14	2%	87%
MAW	A+M	CP	S. Tomé e Príncipe	PS	t2												-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		-1	14		
MAW	A+M	CP	Gabon	TW	t1								41				102				67	37	87	93	17	22	30	34	46	42	13	37	21	56	67		15	1%	88%
MAW	A+M	CP	Gabon	TW	t2								-1				-1				-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1		15		
MAW	A+M	CP	Senegal	TR	t1		193	19	47	55	14	22	26	30	29	23	22	7	3	19	9	113	22	4	0	1	1	5		14	1		56				16	1%	90%
MAW	A+M	CP	Senegal	TR	t2		a	ab	a	a	ab	ab	ab	a	ab	ab	ab	ab	a	a	ab	ab	ab	ab	ab	ab	ab	ab		-1	ab		b				16		
MAW	A+M	CP	EU.Italy	PS	t1																												731				17	1%	91%
MAW	A+M	CP	EU.Italy	PS	t2																												-1				17		
MAW	A+M	CP	EU.Italy	TW	t1																												726				18	1%	92%
MAW	A+M	CP	EU.Italy	TW	t2																												-1				18		
MAW	A+M	CP	Mauritania	LL	t1																		9	11	3	11	10	43	8	0	2	55	303	95	110	46	19	1%	93%
MAW	A+M	CP	Mauritania	LL	t2																		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	19		
MAW	A+M	CP	Angola	GN	t1																					1	16	2	2	598			0	2			20	1%	95%
MAW	A+M	CP	Angola	GN	t2																					-1	-1	-1	-1	-1			-1	-1			20		
MAW	A+M	CP	Gabon	UN	t1						140	145	14	60	85	61																					21	1%	95%
MAW	A+M	CP	Gabon	UN	t2						-1	-1	-1	-1	-1	-1																					21		

Table l. SCRS catalogue: SSM[A+M] (*Scomberomorus maculatus*).

Species	Stock	Status	FlagName	GearGrp	DSet	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
				TOTAL		12782	15318	16285	16317	14490	13697	16571	15403	8877	9837	8220	8383	9414	9793	8119	10472	6308	6118	5900	6199	11788	10916	10156	12684	7798	7741	8668	8331	4331	13112			
SSM	A+M	CP	Mexico	LL	t1	8194	8360	9181	10066	8300	7673	11050	11050	5483	6431	4168	3701	4350	5242	3641	5723	3856	3955	4155	4251	4128	4026	3321	3581	3857	4077	3820	3701	4321	3870	1	53%	53%
SSM	A+M	CP	Mexico	LL	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1		
SSM	A+M	CP	U.S.A.	RR	t1	106	2349	2686	1887	1471	1084	1364	1871	1452	1920	2335	2634	2944	2356	2356	2356					5793	4976	4965	7211	3922	3652	4825	4611	6	6620	2	25%	78%
SSM	A+M	CP	U.S.A.	RR	t2	b	b	b	b	b	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	2		
SSM	A+M	CP	U.S.A.	GN	t1	2227	2961	2704	3028	2779	2094	1354	1416	1350	1163	1208	1260	976	1117	801	1265	1295	1201	971	1086	1029	1059	1044	1051						1748	3	12%	90%
SSM	A+M	CP	U.S.A.	GN	t2	b	b	b	b	b	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1						-1	3		
SSM	A+M	NCO	Dominican Republic	UN	t1	1290	728	735	739	1330	2042	2042	231	191	125	158	158	158																		4	3%	93%
SSM	A+M	NCO	Dominican Republic	UN	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																		4		
SSM	A+M	CP	U.S.A.	UN	t1	120	181	224	128	84	75	67	141	72	75	195	439	478	887	1044	738	725	602	363	483	423	454	433	441						213	5	3%	96%
SSM	A+M	CP	U.S.A.	UN	t2	b	b	b	b	b	b	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1						-1	5		
SSM	A+M	CP	U.S.A.	HL	t1	21	86	22	41	28	103	74	70	82	109	151	181	211	188	273	384	326	339	407	373	390	383	387	385						656	6	2%	98%
SSM	A+M	CP	U.S.A.	HL	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1						-1	6		
SSM	A+M	NCO	Cuba	TR	t1	538	538	611	310	409	548	613	613	236																						7	1%	100%
SSM	A+M	NCO	Cuba	TR	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1																						7		

Table m. SCRS catalogue: WAH[A+M] (*Acanthocybium solandri*).

						TOTAL	1498	1721	1835	2671	2143	2408	2516	3104	2497	2972	2035	2318	2226	2067	2613	2467	1829	2581	2176	2354	2381	2844	4316	5650	3526	2552	17315	6871	6477	4437			
Species	Stock	Status	FlagName	GearGrp	DSet		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rank	%	%cum
WAH	A+M	CP	Mauritania	PS	t1																						20		10	1532			13310	4156	4841	2651	1	26%	26%
WAH	A+M	CP	Mauritania	PS	t2																						-1		-1	-1			-1	-1	-1	-1	1		
WAH	A+M	CP	U.S.A.	RR	t1		2	3	9	199	334	624	542	615	498	733	535	549	763	695	601	473		1032	415	436	616	518	910	387	943	1102	1987	1133	476	930	2	18%	44%
WAH	A+M	CP	U.S.A.	RR	t2		b	b	b	b	b	b	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	b	b	ab	ab	ab	b	b	b	b	b	b	2		
WAH	A+M	CP	Cape Verde	HL	t1												415	534	341	340	365	445	552	520	337	448	431	467	437	443	443	443	490	228	298	290	3	8%	52%
WAH	A+M	CP	Cape Verde	HL	t2					ab	ab	ab	ab	ab	ab	ab	ab	ab	a	ab	ab	ab	ab	ab	ab	ab	b	ab	ab	ab	ab	-1	a	-1	b	a	3		
WAH	A+M	CP	Venezuela	UN	t1		159	302	331	505	538	538	479	479	340	448																					4	4%	56%
WAH	A+M	CP	Venezuela	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																					4		
WAH	A+M	CP	Cape Verde	TR	t1		380	331	338	316	299	370	473	517	330	499																					5	4%	59%
WAH	A+M	CP	Cape Verde	TR	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																					5		
WAH	A+M	NCC	Chinese Taipei	LL	t1																								1236	1120	896						6	3%	63%
WAH	A+M	NCC	Chinese Taipei	LL	t2																								-1	-1	-1						6		
WAH	A+M	CP	Curaçao	UN	t1		280	250	260	270	250	230	230	230	230	230	230	230	230																		7	3%	66%
WAH	A+M	CP	Curaçao	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																		7		
WAH	A+M	CP	U.S.A.	LL	t1		54	118	180	604	56	120	53	117	104	90	79	59	60	64	79	64	68	64	63	64	19	40	62	50	60	27	35	36	28	21	8	2%	68%
WAH	A+M	CP	U.S.A.	LL	t2		ab	ab	ab	ab	ab	b	b	b	b	b	ab	ab	ab	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	8		
WAH	A+M	CP	Brazil	LL	t1		11	41	71	33	3		2	22	40				0	355	175	447	50	6	26	19	19	48	51	225	110	260	203	127	148	23	9	2%	71%
WAH	A+M	CP	Brazil	LL	t2		-1	-1	a	a	a	a	a	-1	a				-1	a	a	a	a	a	a	ab	a	a	a	a	a	a	a	a	a	a	9		
WAH	A+M	CP	S. Tomé e Príncipe	PS	t1												52	52	52	52	94	88	76		131	235	241	247	254	260	266	100	70	172	1	5	10	2%	73%
WAH	A+M	CP	S. Tomé e Príncipe	PS	t2												-1	-1	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	10		
WAH	A+M	NCO	Sta. Lucia	TR	t1														217	169	238	169	187		171	195	199			148	155	87	147	110			11	2%	75%
WAH	A+M	NCO	Sta. Lucia	TR	t2														-1	-1	-1	-1	-1		-1	-1	-1			-1	-1	-1	-1	-1			11		
WAH	A+M	CP	UK.Bermuda	RR	t1		74	67	80	58	50	93	99	105	108	104	61	56	91	87	88	83	86	124	117	101	81										12	2%	77%
WAH	A+M	CP	UK.Bermuda	RR	t2		-1	-1	-1	-1	-1	b	b	-1	a	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	b	b	b	b							12		
WAH	A+M	CP	Panama	LL	t1																		91	240	120	86	111	99	210	373	228		109		77		13	2%	79%
WAH	A+M	CP	Panama	LL	t2																		a	a	a	a	-1	-1	-1	a	a		-1		-1		13		
WAH	A+M	CP	EU.España	BB	t1		23	28	32	22	20	15	25	25	29	28	32	38	46	48	47	214	55	65	38	70	48	86	32	47	33	29	35	34	60	44	14	1%	80%
WAH	A+M	CP	EU.España	BB	t2		a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	14		
WAH	A+M	NCO	Sta. Lucia	UN	t1		77	79	150	141	98	80	221	223	223																						15	1%	81%
WAH	A+M	NCO	Sta. Lucia	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1																						15		
WAH	A+M	CP	EU.España	PS	t1																	92	63	44	224	262	136	240	56								16	1%	82%
WAH	A+M	CP	EU.España	PS	t2																	-1	-1	-1	-1	-1	-1	-1	-1								16		
WAH	A+M	CP	Mauritania	LL	t1																			0			16	240	28	29	36	100	346	108	126	52	17	1%	83%
WAH	A+M	CP	Mauritania	LL	t2																		-1				-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	17		
WAH	A+M	CP	Brazil	UN	t1		41	23	0		23	1			1						345		61	62	49	51		130	73				108	114			18	1%	84%
WAH	A+M	CP	Brazil	UN	t2		-1	-1	-1		-1	-1			-1						-1		-1	-1	-1	-1		-1	-1				-1	-1			18		
WAH	A+M	NCC	Suriname	LL	t1																								588	415							19	1%	85%
WAH	A+M	NCC	Suriname	LL	t2																								-1	-1							19		
WAH	A+M	CP	Grenada	TR	t1		54	77	104	96	46	49	56	56	59	82	51	71	59	44																	20	1%	86%
WAH	A+M	CP	Grenada	TR	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																	20		
WAH	A+M	NCO	Sta. Lucia	HL	t1											310	243	213																			21	1%	87%
WAH	A+M	NCO	Sta. Lucia	HL	t2											-1	-1	-1																			21		
WAH	A+M	CP	Brazil	HL	t1								14	36						49								92	45	253	44	52	93	81			22	1%	88%
WAH	A+M	CP	Brazil	HL	t2								-1	-1						-1								-1	-1	-1	a	-1	-1	a	a	a	22		
WAH	A+M	NCO	Aruba	UN	t1		70	60	50	50	125	40	50	50	50	50	50	50	50																		23	1%	88%
WAH	A+M	NCO	Aruba	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																		23		
WAH	A+M	CP	St. Vincent and Grenadines	LL	t1													255					200	26					5	4	3	0	11	117	66	11	24	1%	89%
WAH	A+M	CP	St. Vincent and Grenadines	LL	t2													-1					-1	a					a	a	a	a	a	a	a	a	24		
WAH	A+M	CP	Cape Verde	PS	t1													3	159	3	93	96	12	59	74	46	68	29	11								25	1%	90%
WAH	A+M	CP	Cape Verde	PS	t2													a	a	a	ab	a	-1	b	ab	-1	-1	-1	-1								25		
WAH	A+M	NCO	Dominica	UN	t1		38	43	59	59	59	58	58	58	58	50	46	11	37	10			0	0						1	1	2					26	1%	90%
WAH	A+M	NCO	Dominica	UN	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1			a	a						-1	-1	-1					26		
WAH	A+M	CP	Cape Verde	BB	t1		78	20	12	10	62	38	30	86	99	88	72	41											2	2	2	2					27	1%	91%
WAH	A+M	CP	Cape Verde	BB	t2		-1	-1	-1	a	-1	a	-1	-1	a	a	a	-1						a					a	a	a	-1					27		
WAH	A+M	NCO	Dominican Republic	UN	t1		6	9	13	7				325	112	31	35	35	35																		28	1%	92%
WAH	A+M	NCO	Dominican Republic	UN	t2		-1	-1	-1	-1				-1	-1	-1	-1	-1	-1																		28		
WAH	A+M	CP	U.S.A.	HL	t1		6	3	5	5	1	8	4	8	1	35	25	25	21	30	32	22	21	28	18	21	18	25	27	21	22	21	35	33	26	37	29	1%	92%
WAH	A+M	CP	U.S.A.	HL	t2		-1	-1	-1	b	b	b	b	b	b	b	b	b	b	-1	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	29		
WAH	A+M	CP	Venezuela	LL	t1				1	9	4	2	7	8	17	18	4	6	10	5	7	13	9	27	4	22	25	19	32	30	21	30	64	51	45	46	30	1%	93%
WAH	A+M	CP	Venezuela	LL	t2				a	a	a	ab	a	ab	ab	ab	a	-1	-1	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	-1	-1	30		
WAH	A+M	CP	UK.Sta Helena	BB	t1		18	12	17	35	26	25	23	19	10	15	15	22	25	18	17	11	20	13	18	29	19	31	12	16	16	10	15	16	9	5	31	1%	93%
WAH	A+M	CP	UK.Sta Helena	BB	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	a	a	a	a	a	a	a	a	a	ab	ab	31		

Appendix 6

Small Tuna Workplan for 2022

This workplan foresees both short and long-term objectives (see specific timeframes below).

Progress on the biological studies of Small Tunas :

- *Background/objectives:* The SMTYP started in 2016-2017 with the initial aim of recovering small tunas historical data (statistical and biological data) from the main ICCAT fishing areas including a specific component of biological studies. A consortium led by Univ. Girona was set in 2018 for the collection of samples aiming biological studies (reproduction and aging LTA, BON WAH) as well as stock (LTA, BON,WAH, FRI, BLT) and species (LTA, FRI, BLT) differentiation studies. In 2020, new consortium led by Brazil (FADURPE) was set to continue these studies. The program is ongoing and currently covers different activities related to biological studies.
- *Priority:* High (1st priority with financial implication)
- *Leader/Participation*: In 2021, the consortium led by Brazil (FADURPE) will continue the biological studies (reproduction and aging) as well as stock and species differentiation studies.
- *Timeframe*: Ongoing work with annual updates scheduled to be provided to the SMT Species Group.

Conventional tagging, recovery and awareness activities

- *Background/objectives:* Following the AOTTP tagging activities and results of the SMTYP from 2018 to 2021, the Group recognized the importance of increasing conventional tagging, recovery and awareness campaigns aimed at artisanal fisheries, and the support for further conventional tagging of wahoo in the Canary Islands and little tunny in the Gulf of Cadiz and the Alboran Sea (Portugal and Spain). The latter correspond to the areas where AOTTP did not promoted tagging campaigns of these species. This would complete the information provided by the Program (growth, reproduction and stock structure) in order to define stock boundaries for those species.
- *Priority:* High (2nd highest priority with financial implication)
- *Leader/Participation*: EU-Spain and EU-Portugal, with collaboration of CPCs willing to participate
- *Timeframe*: A SCRS paper or presentation will be presented during the next Species Group meeting

Revision of small tunas L/W relationships at stock level:

- *Background/objectives*: There are several L/W equations available for small tunas at local level, and several more are being currently developed by various CPCs/national scientists. The Group recommends that joint analyses are carried out using detailed data collected by observer, so that L/W relations representative of the stocks at regional level can be presented and adopted by ICCAT.
- *Priority*: High
- *Leader/Participation*: EU-Spain, with collaboration of CPCs willing to participate/share observed L/W data from observer and sampling programs. EU- Spain and Portugal, Morocco and Brazil have already committed to participate. Other CPCs are expected to join this collaborative effort.
- *Timeframe*: The leader (Pedro Pascual, EU-Spain) will soon circulate a data template and CPCs are invited to submit individual observations of length (cm, SFL) and weight (g, total weight) data on this template by January 2022. A SCRS paper will be presented to the next meeting of the Group in 2022.

Updating the biological meta-database:

- *Background/objectives*: In 2016, the SMT Group started a biological meta-database. The Group recognized the importance of continuously updating this database as new biological information becomes available, also developing criteria for replacing existing parameters when available. Such information is then provided to update the SMT executive summaries and will eventually be used for both qualitative and quantitative assessments for the different species and stocks.
- *Priority*: High

- *Leader/Participation*: EU.PRT, with collaboration of CPCs willing to participate, will continue to update the meta-database and provide updated information (in the form of SCRS papers or presentation) to the Species Group. The next update is planned for the next meeting of the Group in 2022. Scientists that have access to recent literature on SMT biology that can inform this database are encouraged to send that information to the coordinator and the SMT chair. Leaders: Pedro G. Lino and Rubén Muñoz-Lechuga (EU-Portugal)
- *Timeframe*: A SCRS paper will be presented annually to the Species Groups or Intersessional meeting.

Updating and/or applying the Data-Limit Models:

- *Background/objectives*: The SMT Group started applying data-limited methods in 2016 and, although the Group has improved in applying a range of models, the robustness still needs to be evaluated before they can be used to provide management advice. In 2022 the Group will develop the specific ToRs and an agenda for the proposed workshop on data-limit models well before the 2022 intersessional meeting.
- *Priority:* Medium (2nd highest priority with financial implication)
- *Leader/Participation*: Brazil and Morocco will continue to update the application of Data-Limited methods to SMT, with collaboration of CPCs willing to participate.
- *Timeframe:* A workshop in Data-Limit models could be held immediately after (back-to-back) the 2022 intersessional meeting of the Small Tunas Species Group, which would allow the reduction of travel related costs. This workshop should be updated in 2024, also in the format back-to-back the 2024 intersessional meeting of the Small Tunas Species Group. Also, SCRS papers to be presented annually to species Group meetings or Intersessional meeting.

Calibration and adopting internationally agreed Maturity scales:

- *Background/objectives*: During 2020 ICCAT Workshop, studies on small tunas on growth and reproduction, including drafting protocols and training of sample processing and analysis of maturity stage, were carried out. However, the Group feels that further work still needed as regards the calibration and adopting internationally agreed maturity scales for *Acanthocybium solandrii, Auxis rochei, Auxis thazard*.
- *Priority:* low (3rd highest priority with financial implications)
- *Leader/Participation*: Spain will continue to lead the reproduction studies, with collaboration of CPCs willing to participate.
- *Timeframe:* A new workshop on maturity would be held in 2023. Also, SCRS papers to be presented annually to species Group meetings or Intersessional meeting.