Report of the 2025 ICCAT Atlantic White Marlin Data Preparatory Meeting

(hybrid/Madrid, Spain, 24-27 March 2025)

The results, conclusions and recommendations contained in this report only reflect the view of the Billfish Species Group (BIL SG). Therefore, these should be considered preliminary until the SCRS adopts them at its annual Plenary meeting and the Commission revises 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 hybrid meeting was held in-person at the ICCAT Secretariat in Madrid, Spain, from 24 to 27 March 2025. Ms. Karina Ramirez (Mexico), the Billfish (BIL) Species Group ("the Group") Rapporteur and meeting Chair, opened the meeting and welcomed participants. Dr Miguel Neves dos Santos, ICCAT Assistant Executive Secretary, welcomed the participants and wished them success in their meeting.

The Chair proceeded to review the Agenda which was adopted with some changes (**Appendix 1**). The List of participants is included in **Appendix 2**. The List of papers and presentations presented at the meeting is attached as **Appendix 3**. The abstracts of all SCRS documents and presentations presented at the meeting are included in **Appendix 4**. The following participants served as rapporteurs:

Sections	*Rapporteur*
Items 1 and 10	M. Ortiz
Item 2	A. Di Natale, F. Arocha
Item 3	C. Mayor, J. García, M. Ortiz
Item 4	M. Narvaez, A. Kimoto
Item 5	M. Schirripa, B. Mourato, M. Ortiz
Item 6	D. Angueko, C. Brown, M. Neves dos Santos
Item 7	G. Díaz, C. Brown
Item 8	F. Sow, K. Ramírez
Item 9	A. Di Natale, M. Neves dos Santos

2. Review of historical and new information on biology

According to the new rules adopted by the Commission and the SCRS for the executive summary for each species, the biology section will not be included in the white marlin (WHM) executive summary.

The Group was informed that new information on the reproductive biology of white marlin was recently published (Pinheiro *et al.*, 2021), which was made available and discussed by the Group. The paper was based on a large sampling area off Brazil, where the longline (LL) fleet operates. The sample size consisted of 656 females (between 83 and 236 cm lower jaw fork length (LJFL)) and 268 males (between 90 to 220 cm LJFL). The estimated L_{50} were 145.04 cm and 140.03 cm LJFL[1] for females and males, respectively. The peak of maturity was detected in May for both sexes, with a spawning season from April to June.

The Group decided to update the L_{50} parameters for the white marlin assessment according to the new data. It was also decided to carry out a continuity run with the same L_{50} parameter (160.46 cm curved lower jaw fork length (CLJFL)) used in the 2019 assessment (Arocha and Barrios, 2009). The Group found that the growth parameters used in the 2019 stock assessment, which were cited in an unpublished document, are provided in **Table 1**.

The Group suggested to review the growth model for Atlantic WHM and request, if available, the raw data from the study by Die and Drew (2008), and integrate them with new information, and explore the option to estimate growth within the stock synthesis (SS) model for future evaluations.

[1] The document does not specify whether size measures were curved or straight lower jaw fork length.

After the discussion, the Group agreed to continue using the same growth parameters as used in the 2019 stock assessment for this species.

3. Review of fishery statistics and indicators

The Group reviewed the most recent fisheries and biological information available in the ICCAT database system (ICCAT-DB) for WHM and other billfish species. Specifically, the fishery statistics data were analyzed, including Task 1 data (T1NC Nominal Catches), Task 2 data (T2CE catch and effort, T2SZ size samples) and tagging data, both conventional and electronic.

The Secretariat presented SCRS/P/2025/015 that summarizes all available statistical information in the ICCAT-DB for the Billfishes Species Group. It includes Task 1 and Task 2 datasets on billfishes, with a particular focus on WHM, as well as the tools provided for easy visualization of this information, updated as of 24 March 2025. Additionally, it highlights the key issues requiring the Group's attention to facilitate decision-making.

3.1 Task 1 catches and discards data and spatial distribution of catches

The ICCAT Secretariat presented the catch statistics for white marlin (WHM) and the entire billfish dataset for the period from 1950 to 2024. During the presentation, several issues related to the Task 1 Nominal Catches data were highlighted, such as the lack of information for certain years in the data series from some CPCs. The data gaps identified by the Group included missing WHM catch data from the longline fisheries of Grenada (2010-2014), Trinidad and Tobago (2017-2020 and 2022), Brazil (2022), as well as estimates of dead discards (DD) for WHM from the NEI.BIL (not elsewhere included) series in the years 2019, 2022, and 2023. A gap was also detected in the Venezuelan longline catch series for the years 2022 and 2023. For all these data gaps, the Group agreed that estimations be applied using the standard method, which involves calculating the average of the previous three years for any missing values.

Another issue identified during the presentation by the Group was the reporting of billfish catches under the BIL code. Reporting fisheries data of aggregated species makes it very difficult to use this information for the assessment of individual billfish stocks, as well as for other derived estimations like CATDIS. In the past meetings the Group decided to separate these aggregated BIL catches among the three main billfish species - blue marlin (BUM), sailfish (SAI) and white marlin (WHM) - using the catch percentages by main gear (longline) and year from the Task 1 Nominal Catches reported by species.

This approach was also applied for the aggregated BIL catches up to 2023, to completely eliminate BIL from the ICCAT-DB. For the BIL catches in the Mediterranean Sea (sampling area code BIL59), the Group agreed that the best approach was to consider them as catches of Mediterranean spearfish (MSP) only and suggested to review with CPCs if some of the catches reported are indeed from the Mediterranean Sea or other geographical locations. The Group acknowledged that while this is not the ideal solution, it at least provides an estimate that allows for more detailed accounting of these catches. The Secretariat reminded that it is the obligation of CPCs to report fisheries statistics of main ICCAT stocks by species and stock unit, as specified in the ICCAT Convention Basic Text, Recommendations and Resolutions.

Regarding the Nominal Catches of WHM, the Group was informed that in some instances the species catches were reported in the Task 2 catch and effort form, but not in Task 1 Nominal Catches. These cases include the harpoon data series for Canada (1998, 1999, and 2008), the trolling data series for Canada (2005, 2020, and 2023), the longline data for Vanuatu (2013), and the live discard data for UK Bermuda (2014 and 2019). The Group agreed to complete the Task 1 white marlin catch series with the values reported and available in Task 2 catch and effort information.

The revised total catches (T1NC, containing landings and dead discards) of the various billfish species including WHM and roundscale spearfish (RSP) by year and catch type, are presented in **Table 2.** WHM and RSP total catches by gear group and by catch type (landings including dead discards and live discards) are presented in **Figure 1** and **Figure 2**, respectively. In relation to the live discards of WHM and other billfish species (**Table 3**) the level of CPCs reporting continues to be low. The Group reiterates that reporting Task 1 data, disaggregated by landings, dead discards and live discards, is mandatory for all ICCAT-managed species.

The SCRS catalogue for WHM (**Table 4**) on Task 1 and Task 2 data availability was updated with all the Task 1 nominal catches corrections made during the meeting.

The Group also emphasized the need for CPCs to review the catches estimated by the Group and attributed it to a Flag CPC. The Group noted that regarding billfish catches, the Commission and subsidiary bodies have called attention to unusually large, reported catches of black marlin (BLM) and striped marlin (MLS) by the European Union in 2009, 2020 and 2021 in Atlantic waters, species which are normally present in the Pacific and Indian Oceans, but not in the Atlantic. The Group recommended that the CPC involved review this information to determine whether it results from species misidentification or if the catches originate from other oceans and were incorrectly reported to ICCAT, perhaps due to incorrect georeferencing of the data.

The Group decided to use the Task 1 Nominal Catches data series for WHM and RSP, as well as the post release mortality (PRM) of WHM from live discards available in the ICCAT-DB, as inputs for the WHM stock assessment model. The Group agreed to use the estimate of post release mortality used in the 2019 stock assessment of 24% (Anon., 2019). Additionally, the WHM dataset will include the proportional amounts of WHM derived from the aggregated billfish reports, which were distributed among the three main species: BUM, SAI, and WHM.

Document SCRS/2025/029 described current fishery observer data on marlins and proposes a method to estimate the discards of *Makaira nigricans* (BUM) and WHM using catch per unit effort (CPUE) by area and season from the Portuguese pelagic longline fisheries. Based on the total fishing effort of the Portuguese pelagic longline fleet, the document provides preliminary discard estimates for the period 2012-2023.

The Group considered it a reasonable approximation. Discussions also addressed the nature of WHM and BUM discards, identifying current regulations as the primary driver, along with specimen quality issues, including occasional predation. The Group indicated that this methodology should be reviewed by the Subcommittee on Statistics (SC-STATS).

The document SCRS/2025/054 analyzed WHM bycatch in the Uruguayan pelagic longline fleet from 2002 to 2012. Due to identification challenges, white marlin is often recorded under the billfish category, affecting catch assessments. The study estimated annual catches using the ICCAT Bycatch Estimation Tool (BYET) and a generalized linear model (GLM).

The Group discussed the methodology for estimating catches and effort, particularly the classification of landings (L), dead discards (DD), and discarded live (DL) individuals, as well as the spatial division of catch and effort (CE) data, questioning the use of 35°S as a boundary. The decline in catches since 2006 was linked to fleet movements due to changes in target species. The BYET was recognized as valuable, with suggestions to Uruguay for a broader application and improvements in species identification, while also stressing the importance of timely reporting to the ICCAT Secretariat after the authors review their data with the historical series present in the ICCAT database.

The presentation SCRS/P/2025/016 outlines the main characteristics of the fishery in São Tomé e Príncipe, its significance to the local economy, the composition of its fleet and its target species. It also provided information on billfish catches, with a particular focus on white marlin landings.

The Group discussed the growing recreational fishing activity in São Tomé e Príncipe. The authors noted that this activity is expanding in the country. This situation raised concerns within the Group, who urged increased efforts in all CPCs where recreational fishing takes place to monitor and recover data, whether on landings, dead discards or live discards.

Document SCRS/P/2025/017 analyzed the catch characteristics and maturity stages of WHM in the artisanal fishery of Côte d'Ivoire. Based on sampling data collected between 2016 and 2023, the study examines fishing effort, catch variations, size distribution, and gonadal maturity of landed specimens. The results indicated a decline in catches in recent years, a predominance of individuals smaller than the size at first maturity, and a seasonal pattern in catches, with peaks occurring between August and November, coinciding with the upwelling period.

The Group engaged in a discussion concerning various aspects of the data, particularly discrepancies between the maturity size and age data. A key issue raised was the misidentification of landings, with reports of exceptionally large specimens, some reaching up to 3 m. The Group expressed concern that these sizes appeared too large to be typical for the species in question, especially for WHM in the southern area. Given the limited sample size and these discrepancies, it was agreed that further research was needed.

3.2 Task 2 catch and effort

The ICCAT Secretariat presented the Task 2 catch and effort data catalogue to the Group, summarizing all available information on this matter in the ICCAT-DB. During the presentation, several issues were identified for CPCs to review, including data series reported on an annual basis instead of the expected monthly resolution, as well as data presented in 5x10 or 10x10 quadrants since a 5x5 resolution is required for longline fisheries and a 1x1 resolution for other fishing gears.

3.3 Task 2 size data

The detailed Task 2 size data (T2SZ) catalogue was provided to the Group. The Secretariat noted that no major improvements, including historical revisions, were made.

Document SCRS/2025/043 presented a summary of the Task 2 size data available for WHM and the methodology for estimating the input size frequency samples for the stock synthesis model. The authors indicated that they used the same methodology and fleet structure as the 2019 WHM stock assessment.

The Group noted that the size samples reported for white marlin include a few fish measures around 300 cm straight lower jaw fork length (SLJFL), substantially larger sizes than the current expected asymptotic length (L_{INF}) assumed for this species. It was indicated that the size frequency samples are used in the model to inform on the selectivity of fishing gear only. It was also indicated that in the 2019 stock synthesis assessment model or the present evaluation it is not intended to estimate growth parameters using the WHM size data. The Group recommended reviewing the growth model estimates for Atlantic WHM as part of the research plan in the near future.

The Group further enquired about the recent decline in the number of size samples provided by CPCs. The authors indicated that several factors could explain this decrease including changes in fishing practices, like the trends of catch-and-release of billfish in many of the recreational and sport fisheries, where a few numbers of fish are retained and measured. The authors also indicated the recent implementation by CPCs of release practices of live billfishes from longline fleets and the non-retention of this bycatch species, making it difficult to obtain reliable size measures from specimens not brought onboard.

3.4 Tagging data

SCRS/P/2025/018 presented a summary of conventional and electronic tagging. **Table 5** shows the number of recoveries grouped by number of years at liberty. Three additional figures summarise geographically the Atlantic WHM conventional tagging available in ICCAT. The density of releases by 5x5 squares (**Figure 3**), the density of recoveries by 5x5 squares (**Figure 4**) and the WHM apparent movement (arrows from release to recovery locations) shown in **Figure 5**.

For conventional and electronics tagging data, the Secretariat developed an online dataset and dashboards to view the electronic tag metadata. All this information is available on the ICCAT website under the "Statistics" tab in the "Access to ICCAT statistical databases" section.

The Secretariat informed that a full cross-validation of both conventional and electronic ICCAT and USA tagging databases has been completed. As a result, 6,200 new conventional tags from the cooperative Tagging Program (National Oceanic and Atmospheric Administration (NOAA)) and The Billfish Foundation (TBF) have been added to the ICCAT database, representing 14% of the total number of tags. The Secretariat also reported that a review of a new submission from TBF, with more than 3,400 conventional tags for the period 2003-2011, is pending. Furthermore, the Secretariat reports that three ICCAT-owned miniPAT tags have been integrated into the electronic tagging database (ETAG), with the main objective being to integrate all the information obtained from electronics tags, including their metadata and tracks, in a centralized relational database.

4. Review of available indices of relative abundance by fleet

Relative indices of abundance were presented for several fleets and areas in the Atlantic and discussed by the Group. Brief information about the SCRS documents and the main points of the Group discussion are presented below.

Document SCRS/2025/051 presented the updated standardized CPUE of the artisanal drift gillnet fishery off la Guaira, Venezuela, known as the billfish hotspot.

The Group thanked the authors for their efforts on updating the indices since 2011. The Group enquired about the gear configurations (i.e. mesh size, length of driftnet, etc.), and bycatch species by this fishery. The authors clarified that 35 vessels have been authorized for this fishery since the regulation started in 1991 (MPC, 2000); each vessel has a single driftnet that is 600-1200 m in length and 7-14 m in height made from polyamide mesh of 15-25 cm (Alio *et al*., 1994; Marcano *et al*., 2001). This fishery targets billfish but shortfin mako, blue shark, and tunas have been reported. The authors indicated that there are no bycatch of sea turtles and marine mammals, but there were a few occasional bycatch of manta ray in the last 20 years.

Document SCRS/2025/050 provided abundance indices of white marlin caught by the Japanese tuna longline fishery from 1959 to 2023. The Vector Autoregressive Spatio-Temporal (VAST) model (Thorson *et al*., 2015) was used to estimate the indices. The author mainly focused on spatial and interannual variations in density within the model to account for spatiotemporal changes in fishing locations due to shifts in target species, such as tuna and tuna-like species. Based on long-term changes in operational areas and the average weight of WHM in the catch, the data were divided into four periods: 1959-1977, 1978-1992, 1993-2013, and 2014-2023.

The new indices were standardized using logbook data from the entire Atlantic Ocean, whereas the previous indices used in the 2019 stock assessment were estimated using only logbook data from tropical areas where the fisheries have consistently operated. The author indicated that the index for the period 2014-2023 might not represent the entire stock abundance because the fishing area was concentrated only in the Central and Southeast Atlantic. The hotspots in the western Atlantic, where large individuals are mainly caught, were not included in the analysis.

The Group enquired why the author did not fit the VAST model to the entire period from 1959 to 2023, instead of splitting the data for four periods and fitting the model to the data of each period separately. Although the VAST model can impute catch rates for areas with no operations, the author considered it impossible to predict catch rates without fishing information from areas close to the fishing grounds or data from the same fishing locations in nearby years. This is because Japanese fleets largely changed their operational areas decade by decade due to target changes, and the operational areas gradually shrank due to decreased fishing effort, leading to unbalanced data sampling.

The author suggested considering the downweighing or removal of the index for the fourth period from the stock assessment, if it conflicts with the other indices that represent the stock abundance more accurately. The Group agreed to defer the decision to the stock assessment analysts during the modelling process.

Document SCRS/2025/061 provided the standardized CPUEs by the Chinese Taipei longline fishery for the period between 1968 and 2023. Because the information on the number of hooks between floats (HBF) has been available in the logbook only since 1995, two data sets (1968-1997 without HBF information and 1998-2023 with HBF information included) were used in a generalized linear model (GLM) based on the delta approach.

The Group requested the author to provide a nominal CPUE compared to the standardized CPUEs, and the figure was provided during the meeting. The Group understood that Chinese Taipei longliners shifted the main fishing ground to the tropical area outside the hotspot area of WHM in the Southwest Atlantic since 2007, while the Group noted that the Japanese longliners operated in the Southeast Atlantic.

Document SCRS/2025/044 presented a new standardized abundance index of white marlin by the Mexican surface longline fishery in 1993-2023, based on the scientific observer data with 100% coverage of its fishery. The scientific observer data used for the standardization contained live and dead discards as well as retained catches. The target species of this fishery are yellowfin tuna and swordfish, and WHM being a bycatch species.

The Group highlighted that seasonality and bait type preference are clearly seen in the results. The Group asked if using frozen octopus as bait was very common, and the authors indicated that it was frequently used because frozen octopus is cheaper than live bait.

The Group acknowledged the importance of the high coverage of the scientific observer data used for standardization. The Group congratulated the collaboration between the Mexican and Venezuelan scientific groups and encouraged them to continue collaborative research efforts. The Group requested that all CPC scientists clearly indicate if the data used for CPUE standardization include discards or not.

Document SCRS/2025/056 presented a CPUE standardization update for the Venezuelan industrial longline fleet covering the years 1991-2017, using scientific observer data.

Regarding the increasing trend in this index after 2012, although the authors attributed it to the movement of the fleet more towards the Atlantic, where it appears there is an increased possibility of catching more WHM, the Group pointed out that the standardization process already removed the effect of changes in fleet distribution, which means that the increase after 2012 could be a reflection of an increase in stock size. The authors agreed with this last comment and had included it in a revised version of the document.

Document SCRS/2025/052 provided an update on CPUE standardization for the U.S. recreational tournament fishery in 1974-2023.

The author recommended not using this index given that it does not account for changes in fishing power (changes in catchability). The Group discussed whether this index needs to be updated in the future, and it was mentioned that even though it is not currently useful for stock assessment models, it provides relevant information. The Group encouraged the scientists to continue their efforts in the future and to account for changes in catchability in new versions of this index.

Document SCRS/2025/053 presented an updated standardized CPUE of the U.S. pelagic longline index for the period 1993-2023.

No questions or comments were made by the Group.

The Group was informed that Brazil LL (1978-2010), Brazil RR (1996-2017) and Spain LL (1988-2014) indices of abundance were not updated since the 2019 stock assessment. The Group was informed that Brazil has not been able to provide updated information on the Brazilian recreational and longline fisheries for WHM. This was mainly because reliable data are not available due to monitoring challenges in recent years for the recreational fishery, and due to the regulations which since 2005 have prohibited the landing of both WHM and BUM caught by the longline fishery. The Group was informed that Spain does not have sufficient data in recent years to update its index and to provide a robust index of abundance for the longline fishery.

The Group discussed the CPUE evaluation table completed for each series presented during the meeting and agreed with the information for each series as provided in **Table 6**. The Group discussed which indices are to be used from the currently available data (**Table 7**) for the 2025 stock assessment and:

- decided not to use BRA-RR and USA-RR because changes in catchability have not been reflected in the standardization, the Group deeply discussed the same issue during the 2024 Atlantic blue marlin stock assessment.
- decided to exclude the historical SPNA-LL, consistent with the Group's decision on the 2019 stock assessment (see section 2.2 of Anon., 2019).

- recommended maintaining the 1994 data point in the Japanese longline index with high observed coefficient of variation (CV) (0.37), although the high CPUE in 1994 could be biologically implausible.

- agreed that stock assessment analysts can consider down weighing or removing the Japanese longline index in 2014-2023 (4th period), if the index conflicted with the other indices with larger catch, given concerns that this index may not represent the abundance of the stock.

After discussions, the Group agreed to use the following indices for the 2025 WHM stock assessment (**Figure 5**):

1. Brazil, longline, 1978-2010
2. Chinese Taipei, longline, 1968-1997, 1998-2023
3. Japan, longline, 1959-1977, 1978-1992, 1993-2013, 2014-2023
4. USA, longline, 1993-2023
5. Venezuela, gillnet, 1991-2023
6. Venezuela, longline, 1991-2017
7. Mexico, longline, 1993-2023

5. Review of assessment models for evaluation, specifications of data inputs, and modelling options

The last assessment of Atlantic WHM was carried out in 2019 (Anon., 2019) and the management advice was based on the results from the Just Another Bayesian Biomass Assessment (JABBA) and Stock Synthesis models.

5.1 Production models

The Group decided to use, for the 2025 WHM stock assessment, the Bayesian surplus production model (SPM) Just Another Bayesian Biomass Assessment (Winker *et al*., 2018). This model was previously used to provide management advice for the 2019 WHM stock assessment and was also considered appropriate for previous blue marlin and stock assessments. Given the limited biological information available for WHM, one of the most critical aspects when applying surplus production models is the specification of prior parameter(s) for the intrinsic growth rate (*r*).

In the 2019 stock assessment, *r* priors were derived from age-structured model simulations (see details in Winker *et al*., 2020), based on different assumptions of Atlantic WHM life history parameters, including maximum age, growth parameters and other updated biological inputs (see Section 2). This approach enabled the initial parameterization of the age-structured model across a range of stock-recruitment steepness values (*h*), while also accounting for reasonable uncertainty in natural mortality (M).

For the 2025 stock assessment, the Group decided to continue using this approach to estimate the *r* prior. The following life history parameters and other model inputs will be used in the initial JABBA model trials:

- Natural mortality (M) = 0.2 (CV = 30%)

- Length-at-50% maturity = 145.04 cm LJFL females and 140.03 cm LJFL males (Pinheiro *et al*., 2021)

- Growth parameters: L_∞ = 172.0 cm LJFL and 160.6 cm, k = 0.32 and 0.54 for females and males, respectively; $t_0 = -1$ (Drew *et al.*, 2010)

- Maximum age = 20 years (Winker *et al*., 2020)

- Size-at-age parameters adapted from Winker *et al.* (2020), used to inform prior estimation for JABBA

- Steepness (*h*) assumed to be 0.6, consistent with the 2019 stock assessment

- Removals will include both reported landings, dead discards and the dead fraction from live discards, as estimated by the Group (see Section 3)

As the length-at-50% maturity (L_{50}) was updated, and to allow comparisons with previous assessments, the Group requested a continuity run using the *r* prior from the 2019 stock assessment: $\log(r) \sim N(\log(0.181), 0.180)$, and a fixed input value of $B_{MSY}/K = 0.39$. This prior was based on an L_{50} of 160.4 cm CLJFL (Arocha and Barrios, 2009).

5.2 Catch Statistical integrated model Stock Synthesis (SS3)

As in the 2019 stock assessment, the Group agreed to use the fully integrated age-structured modelling platform Stock Synthesis (SS3). The Group also agreed to use the SS3 model configuration used during the 2019 stock assessment meeting, except for the aspects noted below.

The Group agreed to update the female length at L_{50} from 162.2 cm LJFL to 145.04 cm LJFL. The Group also requested that a continuity analysis be carried out to assess the effect of the new value for the L_{50} parameter.

The Group also discussed the possibilities of estimating growth within the SS3 platform, however it was pointed out that the best practice for estimating growth included providing a data set of direct observations of age-at-size, which the Group did not currently have access to.

A more detailed description of the parameter values are given in **Table 1**. These same parameters and values will be used for estimating the Bayesian prior values for use in the SPM JABBA modelling platform.

The Group discussed the proposal to leave the purse seine fishery as a separate fishery within the model. It was noted that the landings reported with this gear are small and seemed to contain some anomalies. However, the Group agreed that this was not enough of a reason to combine the catch into another gear type and to change the decision made by the Group in the 2019 stock assessment. Rather, the Group agreed that the landings from this gear, specifically “mixed flag”, should be investigated for inconsistencies at a later date, but that they will be used in the assessment as presented during the meeting.

Possible sensitivity configurations will be identified during the modelling process as they emerge. Proposed sensitivity analysis will be brought forward during the planned intersessional meetings that will take place between the data preparatory and assessment meetings.

5.3 Diagnostics

Standard modelling diagnostics as recommended by the Working Group on Stock Assessment Methods (WGSAM) should also be carried out and communicated to the Group. The Group outlined a set of standardized model diagnostics to be presented and reviewed for the reference models, including:

- Model fits to abundance indices and size composition data.
- Retrospective analysis of biomass and fishing mortality estimates, including the calculation of Mohn’s rho for each model run.
- Index jackknife procedures to evaluate the influence of each CPUE series on model results.
- Likelihood profiles for steepness (h), virgin recruitment (R_0), and r and K, as appropriate for each model platform.
- Run tests to assess the randomness of CPUE residuals (Carvalho *et al.*, 2021).

6. Recommendations

6.1 Statistics

Improvements to ICCAT Task 1 data

The historical reports of unclassified billfish and unclassified fishing gear were estimated by species and gear by the Secretariat using available data within the same year. However, CPCs should review these changes along with their own data, and provide their own estimates of the data to the SCRS, should they disagree with the resulting changes.

Billfish live and dead discards

The Group reiterates that CPCs should provide live and dead discards estimates for billfish species. The Group reiterates that CPCs that have not yet provided or that change methodology(ies) should provide an SCRS document explaining the methodology on the procedures for estimating live and dead discards as requested by the Commission in paragraph 16 of the *Recommendation by ICCAT to establish rebuilding programs for blue marlin and white marlin/roundscale spearfish* (Rec. 19-05).

Lack of billfishes fisheries statistics for the Mediterranean Sea

The Group recommended that CPCs and scientists make efforts to report, recover historical fisheries data and provide scientific information related to the Mediterranean billfish species. It was noted that for many years there is a lack of information on the current status and basic catches statistics of billfish in the Mediterranean Sea, and are needed for ICCAT to better monitor these resources.

Review of the taxonomy status for sailfish stocks

The Group recommended the Secretariat to coordinate with the Food and Agriculture Organization (FAO) for worldwide usage of a single species name (*Istiophorus platypterus*), code and common name (*sailfish*) for this species. This subject will be further discussed at the upcoming Meeting of the Subcommittee on Statistics.

6.2 Research

Age validation

The Group recommended initiating in 2026 age validation, using bomb-radiocarbon techniques, for WHM and SAI, for the otoliths samples collected in the eastern central Atlantic. This should be planned and integrated in the longer term (4-year) Group workplan and the Enhanced Programme for Billfish Research (EPBR) budget.

Scientific participation at meetings

The Group recommended that CPCs, particularly those that make the bulk of catches, ensure scientific representation at meetings and provide data to the Group, including standardized CPUEs for evaluation purposes.

Spatial coverage of indexes of abundance

With regard to the spatial coverage of the eastern Atlantic Ocean, the Group recommended to develop standardized indices of abundance for the eastern Atlantic particularly for artisanal fisheries.

Improvement of abundance indices

The Group encouraged CPC scientists to continue their efforts to improve abundance indices for recreational fisheries by accounting for the changes in catchability in the standardization.

Billfish tagging

The Group recommended electronic tags to be deployed on marlins if there are opportunities during tagging campaigns for other species. The priority area for such additional tagging is the eastern tropical Atlantic (e.g. Gulf of Guinea).

Sailfish tagging

The Group recommended that electronic tagging efforts are expanded to include SAI.

Review growth model for WHM

The Group recommended to review the Atlantic WHM growth model. In addition, the Group recommended to attempt recovering the raw age data and integrate them with new information on age to update growth models after a thorough review.

7. Review of responses to the Commission request for the Billfish Species Group

The Secretariat presented a summary Excel file with the request from the Commission to the SCRS related to billfish species. The Group thanked the Secretariat for the proposed control Excel file.

The Group identified two main tasks to be addressed in 2025: i) on the revision of the statistical methodology used by CPCs to estimate dead and live discards and provide feedback to the CPCs, Rec. 19-05, para 16; and ii) SCRS review of the feasibility of estimating fishing mortality by commercial, sport/ recreational and artisanal fisheries for main billfish stocks, para 2 of the *Recommendation by ICCAT on management measures for the conservation of Atlantic sailfish* (Rec. 16-11).

The Group agreed to revise previous responses provided to the Commission, work intersessionally to identify new information and elaborate draft responses, aiming at their discussion at the Billfish Species Group and SCRS Plenary Meetings in September 2025.

With reference to CPC statistical methodologies for estimating live and dead discards, it was agreed to work intersessionally to draft a response to be provided at the Billfish Species Group Meeting in September 2025. It was also agreed that the Group will address and draft a response regarding the fishing mortality during the upcoming stock assessment meeting.

8. Enhanced Programme for Billfish Research (EPBR)

The Secretariat provided the background of the Enhanced Programme for Billfish Research (EPBR) and highlighted the main issues faced by the EPBR after the COVID-19 pandemic in using the available funds, which included among other aspects:

- National administrative matters (Mexico) that did not allow a contract to be issued by ICCAT for the development of the reproductive study on blue marlin in the Gulf of Mexico;
- Difficulties encountered in collecting samples for age and growth studies for the three main billfish species (BUM, SAI, and WHM), particularly in obtaining samples of the size classes corresponding to the extremes of the distributions;
- Difficulty in collecting a minimum of at least 50 samples aimed at genetic differentiation between white marlin (*Kajikia albida*) and roundscale spearfish (*Tetrapturus georgii*).

Regarding the BUM reproductive study in the Gulf of Mexico, the Group was informed that national administrative difficulties have not yet been overcome. Therefore, the Group discussed alternatives to move this study forward and identified the following possible options:

1. If the administrative difficulties are resolved, the original work plan will be followed considering the initial terms of reference, although an update to the work proposal would be required;

2. If the administrative difficulties remain, two possibilities were discussed:

    i. The Secretariat should circulate a new Call for Tenders;
    ii. The Mexican research team engaged in the EPBR could carry out the study with its own funds.

The Group agreed that Mexican scientists should developed the necessary internal contacts with their national authorities and inform the Secretariat, before the end of April 2025, on the best way to move forward based on the alternatives listed above.

The Group noted that other aspects that have limited the collection of biological samples also relate to: i) transportation or/and international shipping of the samples; ii) the impact of some management measures regarding the catch limits implemented, which reduced the sampling opportunities at landing; iii) the high cost of purchasing whole fish individuals; and iv) the limited opportunities to collect samples in some industrial fisheries (i.e. longline and purse seine fisheries).

Given the wider distribution in the Atlantic and Mediterranean Sea of billfish species, the Group suggested the need to have a more interactive approach with other species groups and research teams with close working relationships with industrial fleets to enhance the collection of biological samples from major fisheries that catch billfishes as a bycatch. It was noted that opportunistic sampling should be encouraged for all billfish species, centralizing the collection and storage of samples for associated specific research activities, and filling knowledge gaps on the different aspects of the species biology.

The Group also discussed the funding allocated for hiring a stock assessment expert/independent reviewer for the 2023 and 2024 sailfish and blue marlin assessment, who were not hired. As a result, the request for funding of a stock assessment expert to assist in the 2025 white marlin assessment was not approved by the Commission.

Following the above discussions, the EPBR Coordinator summarized to the Group the main achievements of the EPBR over the last years. As regards the 2025 work plan, the following ongoing activities were highlighted:

Tagging

Tagging will be carried out in the NE Atlantic by the same tagging team, so there is the expectation that the objectives will be achieved as in the previous year. New pop-up satellite archival (PSAT) tags have been provided by Wildlife Computers, which have a different shape and new batteries, so there is an expectation of improved performance of the tags. Opportunities of additional tagging are available within other ICCAT species dedicated tagging campaigns.

The Group agreed that opportunistic e-tagging of blue and white marlins should be done during other ICCAT tagging campaigns that are ongoing in 2025 (e.g. swordfish and sharks), and agreed that sailfish should also be included in these tagging efforts.

Sampling

The same partners that have been collecting samples in the past, will continue to do so in 2025. Contacts have been made for additional collaborators to join EPBR efforts for collecting biological data and samples (e.g. spines and otoliths). However, to date this has been mostly limited to very few CPs with industrial or artisanal fleets off West Africa.

The Group strongly encouraged additional CPCs that have the capabilities to collect biological billfish samples to contact the EPBR coordinator and/or the leader of the current consortium.

Age and growth

The main objectives for 2025 are to continue the work for the 3 main species (BUM, WHM and SAI), and continue the age validation for BUM. In 2024 an initial trial for BUM age validation with some limited samples was accomplished with success, and therefore this work will continue in 2025 with additional otolith samples from the eastern Atlantic.

The Group agreed that age validation is an important research line, and that it should be extended in the near future for WHM and SAI, and therefore should be included in the EPBR longer term planning.

Overall, the Group acknowledges the importance of the EPBR programme and supports its continuation. As requested by the Secretariat, a draft long-term budget (for the next two biennial cycles, 2026-2029) will be prepared to be discussed during the upcoming WHM stock assessment meeting, and to be finalized in the Billfish Species Group meeting in September 2025.

9. Other matters

9.1 Review of the sailfish taxonomy status

Document SCRS/2025/021 provides the rationale to change the current scientific name used for sailfish in ICCAT from *Istiophorus albicans* to *Istiophorus platypterus*.

The authors highlighted there is general agreement that the valid name for sailfish is *Istiophorus platypterus* (Shaw, 1792, in Shaw and Nodder, 1792), due to the broad scientific evidence that there is just a single sailfish species worldwide. The Group agreed that ICCAT should update the scientific name for both Atlantic sailfish stocks to *Istiophorus platypterus,* and bring this proposal to the Subcommittee on Statistics at its upcoming meeting in September 2025.

The Secretariat clarified that ICCAT follows the FAO 3-digit species codes for the reports and fisheries statistics database that are submitted by CPCs. Currently FAO maintains the SAI code linked to *Istiophorus albicans* and the common name as "Atlantic sailfish", while the SFA code is linked to *Istiophorus platypterus*, and the assigned common name is "Indo-Pacific sailfish". Therefore, it is not possible to change the scientific name while keeping the SAI code and common name "Atlantic sailfish".

Therefore, the Group recommended the Secretariat to coordinate with FAO the use of a single species name (*Istiophorus platypterus*), code and common name (sailfish) for this species worldwide. The Group also agreed that this be further discussed at the upcoming Meeting of the Subcommittee on Statistics.

9.2 New rules regarding requests related to science funding

The Secretariat provided the background for the new rules related to SCRS science funding requests that should be followed by the Group while drafting the recommendations with financial implications. This included an overview of the available funding and use made between 2020 and 2024 within the EPBR. It was explained that the *Explanatory note on the draft ICCAT budget for financial year XXXX*, which is prepared annually by the Secretariat and discussed during the annual meeting of the Commission aimed at the approval of the regular budget, will now include much more information regarding the science budget, including among others: i) a general overview of the use of the funds made available over the previous 5 years; ii) the balance of the science budget; iii) a clear description and justification of the activities to be developed, together with thorough estimates of the associated funding requests; iv) the rationale for those activities that are planned for multi-years; and, v) the funding requests to be estimated for the upcoming two biennial cycles of the Commission regular budget, and compiled in the budget table template developed by the Secretariat.

Accordingly, a new template has been developed by the Secretariat to be filled by the SCRS subsidiary bodies, while drafting their recommendations with financial implications (see below). However, since the first draft of the *Explanatory note on the draft ICCAT budget for financial year 2025* is due by late June, it would be essential that Chairs/rapporteurs provide in advance a tentative list of activities and estimates of associated cost by major line of activity as detailed in the table below.

Working group	*2026*	*2027*	*2028*	*2029*	*Explanations*
Tagging					
Tag and tagging material purchases					
Rewarding, awareness and satellite					
Tagging campaign					
Biological studies:					
Reproduction					
Age and growth					
Genetic					
Other (sample bank)					
Sample collection and shipping					
Other fisheries related studies					
Consumables					
Workshops/meetings					
Modelling:					
MSE					
Stock assessment					
Other					
Science coordination (e.g. GBYP, Steering committee)					
TOTAL					

An EXCEL file has also been made available by the Secretariat to allow for more thorough estimates related to travel and subsistence costs, which should be used by the SCRS to estimate costs associated with the invitation of experts and/or instructors to meetings and workshops.

The Group was informed that the SCRS Science Strategic Plan Ad Hoc Drafting Group will be working intersessionally to advance the drafting of the 2026-2031 SCRS Science Strategic Plan for review at the SCRS Science Strategic Plan Meeting (9-11 July 2025). The SCRS Chair reminded the Group that all species groups have been asked to develop 6-year plans within their research programmes, in parallel with the Science Strategic Plan development, to encourage strategic research planning and facilitate collaborative efforts across species groups. He suggested that the budget table template could also serve as a good format for 6-year research plan summary tables, since the headings included are fairly comprehensive, and new rows could be added under each heading for separate research projects. This would also greatly facilitate synchronizing the budget template for the funding requests with the strategic research plans.

10. Adoption of the report and closure

The report was adopted during the meeting. The Group agreed to have intersessional informal online meeting(s) with the modeller's team to discuss progress and preliminary results before the stock assessment meeting in June 2025. The Chair will provide information on the meeting(s) schedule via email and invited all the participants of this meeting become engaged in the process.

The Chair thanked all the participants for their efforts. The meeting was adjourned.

References

Alio, J., Marcano, L., Gutierrez, X., Fontiveros, R. 1994. Descriptive analysis of the artisanal fishery of billfishes in the central coast of Venezuela. Collect. Vol. Sci. Pap. ICCAT, 41: 253-264.

Anonymous. 2019. Report of the 2019 ICCAT White Marlin Stock Assessment Meeting. Collect. Vol. Sci. Pap. ICCAT, 76(4): 97-181.

Arocha, F., Barrios. A. 2009. Sex ratios, spawning seasonality, sexual maturity, and fecundity of white marlin (*Tetrapturus albidus*) from the western central Atlantic. Fish. Res., 95: 98-111.

Carvalho, F., Winker, H., Courtney, D., Kapur, M., Kell, L., Cardinale, M., Schirripa, M., Kitakado, T., Yemane, D., Piner, K.R., Maunder, M.N., Taylor, I., Wetzel, C.R., Doering, K., Johnson, K.F., Methot, R.D. 2021. A cookbook for using model diagnostics in integrated stock assessments. Fisheries Research. 240. doi.org/10.1016/j.fishres.2021.105959.

Die, D.J., Drew, K. 2008. An Atlantic-wide study of age and growth of Atlantic marlins. In Donalson D. (ed.), Proceedings from the Atlantic Billfish Research Program Symposium. Gulf States Marine Fisheries Commission, Galveston, Texas (158): 67-84.

Drew, K., Die, D.J., Arocha, F., Hazin, F. 2010. Estimating age and modeling growth in white marlin. SCRS/2010/042: 1-13. Unpublished document, please contact the Secretariat for information.

Marcano, L.A., Alió, J.J., Arocha, F., Gutiérrez, X. 2001. Tendencia actual de la pesquería artesanal de peces de pico en la costa central de Venezuela período 1988-1999. Collect. Vol. Sci. Pap. ICCAT, 53: 281-290.

MPC, 2000. Resolución MPC/DM/No. 020, Gaceta Oficial No. 5.438 (extraordinaria). Caracas, 08/02/2000.

Pinheiro, P., Da Mata Oliveira, I., Gomes do Rêgo, M., Mourato, B., Hazin, F. 2021. Reproductive biology of the white marlin (*Kajikia albida*) in the southwestern and equatorial Atlantic Ocean. Journal of Applied Ichthyology, 37 (4): 523-533.

Prager, M.H., Prince, E.D., Lee, D.W. 1995. Empirical length and weight conversion equations for blue marlin, white marlin, and sailfish from the North Atlantic Ocean. Bulletin of Marine Science, 56(1): 201-210.

Shaw, G., Nodder, F.P. 1789-1813. The Naturalist's Miscellany, or coloured figures of natural objects; drawn and described from nature. London. 23 vols. unnumbered pages, Pl. 88 (1792).

Thorson, J.T., Shelton, A.O., Ward, E.J., Skaug, H. 2015. Geostatistical delta-generalized linear mixed models improve precision for estimated abundance indices for West Coast groundfishes. ICES J. Mar. Sci. 72(5): 1297–1310.

Winker, H., Carvalho, F., Kapur, M. 2018. JABBA: Just Another Bayesian Biomass Assessment. Fish. Res. 204, 275–288. https://doi.org/http://doi.org/10.1016/j.fishres.2018.03.01.

Winker, H., Mourato, B., Chang, Y. 2020. Unifying parameterizations between age-structured and surplus production models: An application to Atlantic white marlin (*Kajika albida*) with simulation testing. Col. Vol. Sci. Pap. ICCAT 76, 219–234.

Table 1. Summary of the Atlantic white marlin biological parameters to be used in the 2025 stock assessment as models' inputs. Note: The growth model parameters are from an unpublished document SCRS/2010/042* presented during the 2010 Meeting of the Billfish Species Group.

Biological Parameter	**Value and variance**	**Reference**	**Notes**
Natural mortality (M)	M = 0.2, CV = 30%		Default value adopted by Billfish SG
Length at 50% maturity (L_{50})	L_{50} = 145.04 cm LJFL females L_{50} = 140.03 cm LJFL males	Pinheiro *et al*., 2021	Default values adopted by Billfish SG
	L_{50} = 160.40 cm LJFL females	Arocha and Barrios, 2009	Value for continuity run only
Growth von Bertalanffy model	L_{INF} = 172.0 cm LJFL females L_{INF} = 160.6 cm LJFL males	SCRS/2010/042	
	k = 0.32 females k = 0.54 males		
	T_0 = -1 females and males		Default value adopted by Billfish SG
Maximum age	Age_{MAX} = 20 years	Conventional tagging ICCAT DB	
Conversion factors size weight	RWT = 3.9045E-6 LJFL $^{3.0694}$ females RWT = 1.9556E-5 LJFL $^{2.7487}$ males RWT = 5.2068E-6 LJFL $^{3.0120}$ unisex	Prager *et al*., 1995**	

* Drew, K., Die, D.J., Arocha, F., Hazin, F. 2010. Estimating age and modeling growth in white marlin. SCRS/2010/042: 1-13. Unpublished document, please contact the Secretariat for information.
** Prager, M.H., Prince, E.D. and Lee, D.W. 1995. Empirical length and weight conversion equations for blue marlin, white marlin, and sailfish from the North Atlantic Ocean. Bulletin of Marine Science, 56(1): 201-210.

Table 2. Task 1 nominal catches in tons (including landings and dead discards) of the various billfish species by year, stock and catch type (C=catches, L=landings, LF=landings corresponding to faux poissons and DD=dead discards) for the 1950-2023 data series.

Year	BUM				SAI							SPF						WHM			BLM			MLS		MSP		RSP		SSP		
	A+M				ATE				ATW			ATE			ATW			A+M			A+M			A+M		A+M		A+M		A+M		
	C	L	LF	DD	C	L	LF	DD	C	L	DD	C	L	DD	C	L	DD	C	L	DD	C	L	DD	L	DD	L	DD	L	DD	C	L	DD
1950	0								0									0														
1951	0								0									0														
1952	0								0									0														
1953	0								0									0														
1954	0								0									0														
1955	0								0									0														
1956	0	39							0	1		0				0		0	19													
1957	0	764				71			0	24			19			4		0	160													
1958	0	772				32			0	66			7			13		0	161													
1959	0	841				4			0	5			8			11		0	112													
1960	103	2712				50			111	65			41			59		60	253													
1961	315	3768				173			329	21			131			36		138	692													
1962	244	7064				218			301	63			241			80		143	1921													
1963	244	8794				230			236	118			282			135		138	2476													
1964	251	7760				264			259	274		1	280		1	411		169	3566													
1965	217	5939			3	794			330	649		3	589		3	554		161	4745													
1966	209	3654			5	535			312	337		39	789		42	380		199	3314													
1967	287	1959			90	758			347	346		145	204		59	249		214	1213													
1968	300	2227			89	831			354	517		23	413		77	332		247	1802													
1969	289	2817			95	867			352	400		84	225		140	202		397	1875													
1970	292	2594			98	530			709	549		69	269		200	371		189	1958													
1971	392	3006			126	790			636	607		68	285		197	163		233	2033													
1972	441	1973			161	709			426	378		66	671		192	49		516	1773													
1973	400	2826			160	510			396	253		26	404		42	88		378	1490													
1974	526	2569			3156	417			448	305		22	224		36	85		264	1511													
1975	508	2763			4855	423			428	304		17	201		19	40		265	1496													
1976	508	1911			4721	677			554	298		57	396		19	127		291	1548													
1977	567	1614			937	520			701	199		17	320		20	12		499	651													
1978	568	1074			2033	496			680	99		5	267		4	12		415	560													
1979	582	945			2798	432			653	214		1	260		7	29		426	613													
1980	662	1186			1516	553			622	219		7	293		21	44		293	683													
1981	817	1253			1518	620			730	238		7	358		13	75		389	874													
1982	664	2044			2059	737			740	303		10	396		11	66		277	823													
1983	836	1306			2976	730			1115	71		1	350		18	28		560	1220		1											
1984	1047	1841			1918	527			884	267		10	259		28	42		439	774		6											
1985	985	2414		0	1823	446			788	216		9	277		39	49		393	1337		2											
1986	916	1184		0	1573	491			1090	162		0	292		58	65		485	1203		16											
1987	818	1321		138	2086	469			884	267	42	12	271		75	26		418	1133	62	0											
1988	753	1991		124	1641	469			810	275	57	4	291		11	226		538	875	60						0						
1989	1044	3089		191	1184	526			719	276	57	5	305		12	97		380	1436	107	26					0						
1990	684	3749		159	1611	704			881	292	62	4	413		10	55		405	1253	81	2					0						
1991	500	3554		142	1084	390			880	282	64	8	123		0	84		528	1125	90	5					1						
1992	625	2306		146	1329	447			1168	259	36	1	254		1	17		455	1015	88						0						
1993	816	2203		127	1353	472			1017	334	63	13	407		8	115		650	969	67	4					0						
1994	1136	2969		111	786	385			775	317	28	1	197		4	119		343	1816	43	34					0						
1995	1186	2847		153	856	375			977	208	29	6	201		4	22	6	405	1374	101	117					1						
1996	1678	3491		197	1096	784			852	222	69	3	125		13	24	1	464	1150	65	52	18				1						
1997	1398	4133		139	1069	278			900	300	57	2	192		4	4		414	1028	70	149	2				2						
1998	1766	3819		52	964	398			1031	557	27	9	183		1	76		495	1417	33	171	6				3						
1999	1987	3255		83	958	384			887	622	72	31	226		22	28		434	1295	58	142	5				3				0		
2000		5354		60		1980				1964	45		181			99			1499	41		49				5						
2001		4352		25		2805				1787	11		81			108			1060	18		53				28						
2002		3759		49		2347				2058	7		84			96			979	33		17				54						
2003	160	4141		19		2639			6	1491	5		54			79		8	821	17		54				105					2	
2004	8	3075		35		2612			22	1714	7		51		0	140		14	803	28		12				88		2				
2005	19	3469		25		2266			58	1783	4		68			105			760	18		16		9		50		3				
2006	117	2915		39		1916			18	1916	6		84			264			599	12		28		20		2		6				
2007	112	4113		43		2578			11	1546	8		66			104			712	36		24		22		5		2			0	
2008		3569		38		2232				1727	10		60			109			691	21		21		1		269		5			0	
2009		3070		61		2138				1619	10		78			64			730	26		440		59		392		4			7	
2010		2998		20		1858		0		1234	5		128	0		120			508	12		14		0		150		4			0	
2011		2749		56		1553		1		1383	10		73	0		80	0		528	27		45	0	7	0	92		0			0	
2012		2731		82		1596		5		1298	20		170	0		60	0		461	27		23	6	75		37		3			3	0
2013		2086		64		1342		0		975	12		95	0		353	0		644	12		4	7	8		45		8			5	0
2014		2712		61		1164		0		873	11		16	0		36	0		439	12		9	5	14		118		16			1	0
2015		1965		114		1241		6		998	7		18	0		60	2		508	11		2	0	26		20		12			44	1
2016		2084		69		1422		1		1437	7		14	0		61	0		449	11		2		14	0	11		22			40	3
2017		2640		109		1641		9		1463	7		29	0		321	1		451	14		4	0	19		10		36			50	3
2018		1849		150		935		9		1719	7		23	13		137	1		250	36		0	0	19	0	23		11			54	1
2019		1861		129		2241		29		1472	5		49	11		54	5		241	66		5		27	0	68		11			40	3
2020		2279		129		1199		19		1322	3		195	10		71	4		233	11		379	0	235	0	31		9	0		143	2
2021		2394		157		1728		4		910	2		178	5		289	2		163	9		296	0	120	0	26		9			89	2
2022		1643	31	121		1087	79	17		1074	3		133	1		146	2		213	8		0	0	11	7	126	1	7	0		17	1
2023		1811	12	133		1051	5	20		1226	4		137	2		518	3		157	17		1	0	13	0	13	0	11	0		24	2

Table 3. Live discards in tons of white marlin (WHM) and other billfish species (SPF - Spearfish; BLM - Black marlin; MLS – Striped marlin; MSP - Mediterranean spearfish; RSP - Roundscale spearfish; SSP - Shortbill spearfish) by stock for the 2000-2023 data series (0 values represent less than 0.5 t reports).

Year	BUM	SAI		SPF		WHM	BLM	MLS	MSP	RSP	SSP
	A+M	ATE	ATW	ATE	ATW	A+M	A+M	A+M	A+M	A+M	A+M
2000						0					
2001						0					
2002						1					
2003						0					
2004	2					0					
2005						0					
2006	47		13			15					
2007	59		5			25					
2008	20		2			6					
2009	60		0			6					
2010	31		0			15					
2011	111		0		0	36					
2012	118		0		0	18					
2013	141		0		0	4	0				
2014	94		11		0	6					
2015	145	0	0		0	1	0				
2016	74	0	12		0	4		0	0		
2017	125	0	16		0	2	0				
2018	122		8		0	4	0	0			
2019	82	0	4		0	4					0
2020	50		4			2				0	
2021	37	0	2		0	4	0	0			0
2022	48	0	2	0	0	3	0	0			0
2023	67	0	2	0	0	5	0	0		0	0

Table 4. SCRS Catalogue of Task 1 in tons and Task 2 (T2 availability) data for Atlantic white marlin (WHM), detailing the most important fisheries (representing 95% of catches) between 1994 and 2023. T2 availability is classified as: 'a' (T2CE only), 'b' (T2SZ only), 'ab' (both T2CE & T2SZ), and '-1' (no data).

Score: 5.129

Specie	Sto	Stat	FlagName	GearG	DSet	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	2020	2021	2022	2023	Rank	%	%cum
					T1 Total	2202	1880	1679	1513	1945	1786	1540	1078	1012	845	844	777	612	748	712	755	520	555	488	656	452	518	460	465	286	307	244	172	221	174			
WHM	A+M	NCC	Chinese Taipei	LL	t1	1350	907	566	441	506	465	437	152	178	104	172	56	44	54	38	28	20	28	17	7	7	12	12	7	7	5	5	5	2	1	1	22.1%	22%
WHM	A+M	NCC	Chinese Taipei	LL	t2	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	ab	ab	ab	a	ab	1		
WHM	A+M	CP	Venezuela	LL	t1	206	271	258	168	297	210	166	176	198	158	116	143	169	103	47	109	108	154	106	63	74	104	158	150	94	106	36	32	43	59	2	16.0%	38%
WHM	A+M	CP	Venezuela	LL	t2	ab	ab	ab	ab	ab	ab	ab	b	b	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	a	ab	ab	ab	ab	ab	a	a	a	a	a	2		
WHM	A+M	CP	Brazil	LL	t1	91	101	70	105	102	158	108	172	342	266	80	243	87	63	41	32	30	79	72	241	98	121	67	47	62	76	46	0	41	13	3	12.0%	50%
WHM	A+M	CP	Brazil	LL	t2	a	a	a	a	a	ab	ab	ab	ab	a	a	ab	ab	ab	ab	ab	ab	ab	ab	a	a	a	a	a	a	ab	a	-1	a	a	3		
WHM	A+M	NCO	NEI (ETRO)	LL	t1	214	237	285	359	526	498	322	180	11	9																					4	10.4%	61%
WHM	A+M	NCO	NEI (ETRO)	LL	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1																					4		
WHM	A+M	CP	EU-España	LL	t1	7	36	141	93	101	119	186	61	6	22	64	58	51	46	32	17	111	5	34	37	93	113	89	108	2	2	37	48	42	4	5	6.9%	67%
WHM	A+M	CP	EU-España	LL	t2	ab	b	b	ab	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	b	-1	b	b	-1	-1	b	a	a	5		
WHM	A+M	CP	Japan	LL	t1	92	57	112	58	56	40	83	56	16	33	36	34	39	21	34	43	41	31	42	24	6	8	9	10	8	12	8	8	3	10	6	4.0%	72%
WHM	A+M	CP	Japan	LL	t2	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	a	ab	a	a	a	a	a	a	a	a	6		
WHM	A+M	NCO	NEI (BIL)	LL	t1	1	1					34	78	4	30	134	42	38	180	214	210	2	13	2	1	0	0	4	6	3	4	3	2	3	3	7	4.0%	76%
WHM	A+M	NCO	NEI (BIL)	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	7		
WHM	A+M	CP	S Tomé e Príncipe	TR	t1	21	21	30	45	40	36	37	37	37	37	21	33	29	35	36	37	38	39	40	41	42	17	15	13	1	10	11	20	27	27	8	3.4%	79%
WHM	A+M	CP	S Tomé e Príncipe	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	-1	-1	-1	-1	-1	-1	8		
WHM	A+M	CP	Korea Rep	LL	t1	43	23	59	23	35	39	0			11	40	7		113	96	78	45	45			0	0	0	0	0	0	1	0	0	0	9	2.6%	82%
WHM	A+M	CP	Korea Rep	LL	t2	a	a	a	a	-1	-1	-1			-1	a	a		-1	a	a	-1	-1			ab	-1	-1	b	-1	a	-1	-1	-1	-1	9		
WHM	A+M	CP	USA	LL	t1	44	100	65	70	32	57	41	17	29	17	27	17	9	8	9	13	8	23	20	10	11	8	3	5	2	2	1	1	1	1	10	2.6%	84%
WHM	A+M	CP	USA	LL	t2	a	a	a	a	a	ab	a	ab	abc	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	10		
WHM	A+M	CP	Barbados	LL	t1	26	43	15	41	33	25	25	24	15	15	18	16	33	22	24	26	3	2	4	5	5	10	12	14	15	10	14	9	9	7	11	2.0%	86%
WHM	A+M	CP	Barbados	LL	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	a	a	a	a	ab	ab	ab	a	a	a	a	a	a	11		
WHM	A+M	CP	Trinidad and Tobago	LL	t1	11	18	8	32	10	13	4	2	5	12	6	6	5	12	10	11	15	14	39	33	38	32	20	30	27	26	28	0	18	0	12	1.9%	88%
WHM	A+M	CP	Trinidad and Tobago	LL	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1	a	a	a	a	a	a	a	a	a	a	a	a	a	a	-1	-1	-1	-1	a	-1	a	12		
WHM	A+M	CP	Mexico	LL	t1	7	11	3	1	3	6	11	13	16	15	28	25	16	14	14	19	20	28	36	31	20	26	20	12	16	9	10	12	8	8	13	1.8%	90%
WHM	A+M	CP	Mexico	LL	t2	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	ab	ab	ab	ab	ab	13		
WHM	A+M	CP	Venezuela	GN	t1	12	5	2	3	13	18	12	7	17	10	19	13	21	28	16	19	8	6	15	12	15	15	10	9	8	11	8	10	10	9	14	1.4%	91%
WHM	A+M	CP	Venezuela	GN	t2	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	a	a	a	a	ab	b	b	b	b	b	b	b	b	-1	14		
WHM	A+M	CP	Grenada	LL	t1							1	15	8	14	33	10	12	11	17	14	14	15	14	14	14	37	15	9	11	19	14	1	5	13	15	1.3%	93%
WHM	A+M	CP	Grenada	LL	t2							-1	-1	-1	-1	a	a	a	a	a	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	15		
WHM	A+M	CP	EU-Portugal	LL	t1					1	1			1	5	19	39	22	2	35	40	11	18	25	12	9	7	12	14	2	2	2	11	2	5	16	1.2%	94%
WHM	A+M	CP	EU-Portugal	LL	t2					-1	-1			-1	a	a	a	a	a	ab	ab	ab	ab	ab	ab	ab	ab	ab	ab	b	b	a	ab	a	a	16		
WHM	A+M	NCO	Mixed flags (FR+ES)	PS	t1	11	9	7	7	9	8	12	13	12	13	13	11	10	9	10	12	12	37													17	0.8%	95%
WHM	A+M	NCO	Mixed flags (FR+ES)	PS	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1													17		
WHM	A+M	CP	China PR	LL	t1	9	11	9	11	15	30	2	20	23	8	6	9	6	10	5	9	8	3	4	2		0	0	3	2	3	2	2	2	2	18	0.8%	95%
WHM	A+M	CP	China PR	LL	t2	-1	-1	-1	-1	-1	-1	a	a	a	a	a	a	a	a	a	a	a	a	a	a		a	a	a	a	a	a	a	a	a	18		

Table 5. Summary of WHM conventional tagging data: number of recoveries grouped by number of years at liberty in each release year. The last column shows the recovery rate (%) in each release year.

Number of tag Atlantic white marlin (*Tetrapturus albidus*)													
			Years at liberty										
Year	Releases	Recaptures	< 1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 10	10+	15+	Unk	ERROR	% recapt*
1953	1												
1954	4												
1955	141	2					1				1		1.4%
1956	415	1	1										0.2%
1957	137	0											
1958	38	0											
1959	200	0											
1960	107	0											
1961	236	2			1	1							0.8%
1962	380	3		2		1							0.8%
1963	654	4	2	1	1								0.6%
1964	533	13	7	2	3	1							2.4%
1965	376	9	4	3	1		1						2.4%
1966	485	16	6	3	1	2	2	2					3.3%
1967	534	6	1	1	2		2						1.1%
1968	882	21	10	5	5		1						2.4%
1969	1316	25	10	9	6								1.9%
1970	833	31	11	12	3	1	2	1		1			3.7%
1971	977	23	15	2	3		1	2					2.4%
1972	467	8	4		1		2			1			1.7%
1973	273	7		4		2	1						2.6%
1974	263	4	2	1	1								1.5%
1975	453	7	2	3	1		1						1.5%
1976	315	6	3	1	1		1						1.9%
1977	342	4	2	1		1							1.2%
1978	860	13	2	5	3	1	1	1					1.5%
1979	743	12	3	5	1	2	1						1.6%
1980	989	17	6	6	3	1		1					1.7%
1981	790	14	10	2			1						1.8%
1982	930	21	11	3	1	4	1	1					2.3%
1983	1030	24	11	7	3		1	2					2.3%
1984	1041	21	6	8	1	1	1	4					2.0%
1985	911	18	8	3	3		1	1		2			2.0%
1986	995	23	8	3	4	3	1	2			2		2.3%
1987	1051	18	8	2	2	2	1	2		1			1.7%
1988	1130	18	7	2	4	2		3					1.6%
1989	1234	21	4	3	4	1	1	4		1	3		1.7%
1990	1303	23	3	10	3	4	1	2					1.8%
1991	1782	48	17	11	9	6	2	2			1		2.7%
1992	1824	56	15	12	10	6	4	1			8		3.1%
1993	2377	82	27	15	14	8	6	5			7		3.4%
1994	2016	71	14	16	14	7	4	8			8		3.5%
1995	2773	124	42	35	17	18	8	1	1		2		4.5%
1996	1666	35	10	14	4	4	1	2					2.1%
1997	2018	44	14	15	9	2	1	1			2		2.2%
1998	2723	82	46	21	6	4	1	1		1	2		3.0%
1999	1727	22	6	7		2		5			2		1.3%
2000	1358	15	7		3	1	3				1		1.1%
2001	1474	19	7	3	4	2	1	2					1.3%
2002	1893	23	10	7	2	2					2		1.2%
2003	218	1	1										0.5%
2004	206	1		1									0.5%
2005	168	0											
2006	169	5	1	1	2						1		3.0%
2007	115	0											
2008	74	1	1										1.4%
2009	86	1							1				1.2%
2010	96	2			1						1		2.1%
2011	205	7	3	2		1		1					3.4%
2012	420	4	1	2	1								1.0%
2013	511	9	5	1		2	1						1.8%
2014	573	8	3	2	2		1						1.4%
2015	670	2	1	1									0.3%
2016	634	2	1		1								0.3%
2017	371	2	1		1								0.5%
2018	472	3	2		1								0.6%
2019	412	3	3										0.7%
2020	209	1	1										0.5%
2021	505	11	5								5	1	2.2%
2022	319	1		1									0.3%
2023	309	0											
2024	334	0											
Unk	79	68									68		86.1%
	54155	1188	411	276	163	96	59	57	2	7	116	1	2.2%

Table 6. CPUE evaluation table for the available standardized CPUE series for the 2025 white marlin stock assessment.

Use in stock assessment?	None	Adequate	Adequate	Adequate	None	Adequate	Adequate	Adequate	Adequate
SCRS Doc No.	SCRS/2019/034	SCRS/2019/035	SCRS/2025/050	SCRS/2025/061	SCRS/2025/052	SCRS/2025/053	SCRS/2025/051	SCRS/2025/056	SCRS/2025/044
Index Name:	BRA RR	BRA LL	JPN LL	Chinese-Taipei LL	US RR	USobs LL	VEN GN	VEN LL	MEX LL
Data Source (state if based on logbooks, observer data etc)	sport fisheries	logbooks	logbooks	logbooks	tournament reports	scientific observers	Port sampler	scientific observer	Observers Scientific
Do the authors indicate the percentage of total effort of the fleet the CPUE data represents?	NA	No	Yes	Yes	No	Yes	Yes	Yes	Yes
If the answer to 1 is yes, what is the percentage?			71-80%	91-100%		0-10%	91-100%	0-10%	91-100%
Are sufficient diagnostics provided to assess model performance??	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient
How does the model perform relative to the diagnostics ?	Well	Well	Well	Well	Mixed	Well	Well	Well	Well
Documented data exclusions and classifications?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data exclusions appropriate?	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	Yes
Data classifications appropriate?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographical Area	Atl SW	Atl S	Atl S	Atlantic	Atl NW	Atl NW	Localised (< 10x 10 degrees)	Tropical	Atl NW
Data resolution level	trip	Set	Set	Set	OTH	Set	Set	Set	Set
Ranking of Catch of fleet in TINC database (use data catalogue)	11 or more	1-5	6-10	1-5	11 or more	6-10	11 or more	1-5	1-5
Length of Time Series	longer than 20 years	longer than 20 years	longer than 20 years	longer than 20 years	longer than 20 years	longer than 20 years	longer than 20 years	longer than 20 years	longer than 20 years
Are other indices available for the same time period?	Many	Many	Few	Few	Few	Few	Many	Many	Many
Are other indices available for the same geographic range?	None	Few	Few	Few	Few	None	Few	Few	Few
Does the index standardization account for Known factors that influence catchability/selectivity? (eg. Type of hook, bait type, depth etc.)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Estimated annual CV of the CPUE series	Variable	Variable	Low	Low	High	Low	Medium	Medium	Medium
Annual variation in the estimated CPUE exceeds biological plausibility	Possible	Possible	Unlikely	Unlikely	Possible	Possible	Possible	Possible	Possible
Is data adequate for standardization purposes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is this standardised CPUE time series continuous?	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
For fisheries independent surveys: what is the survey type?									
For 19: Is the survey design clearly described?					No	Yes			
Other Comments	Not used for BUM	Useful to stock assessment until 2010	1959-1977/1978-1992/1993-2013/2014-2023	1968-1997 and 1998-2023	Not used for BUM				

Table 7. Available standardized CPUE for the 2025 white marlin stock assessment.

Index	Brazil RR		Brazil LL		Japan LL prior		Japan LL 1		Japan LL 2		Japan LL 3		Chinese-Taipei LL 1		Chinese-Taipei LL 2		US RR		US observer LL		Spain LL		Venezuela GN(hot spot)		Venezuela LL (hot spot)		Mexico LL	
	BRA-RR		BRA-LL		JPN-LL prior		JPN-LL1		JPN-LL2		JPN-LL3		CTP-LL1		CTP-LL2		US-RR		USA-LL		SPN-LL		VEN-GN		VEN-LL		MEX-LL	
SCRS Doc No.	SCRS/2019/034		SCRS/2019/035		SCRS/2025/050		SCRS/2025/050		SCRS/2025/050		SCRS/2025/050		SCRS/2025/061		SCRS/2025/061		SCRS/2025/052		SCRS/2025/053		SCRS/2019/046		SCRS/2025/051		SCRS/2025/056		SCRS/2025/044	
Catch Units	Number		Number		Number		Number		Number		Number		Number		Number		Number		Number		Number		Weight		Number		Number	
Use in 2025 SA	NO		YES		YES		YES		YES		YES		YES		YES		NO		YES		NO		YES		YES		YES	
Year	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	SE	Std.CPUE	CV	Std.CPUE	CV	Std.CPUE	CV
1959					0.58	0.44																						
1960					0.18	0.17																						
1961					0.62	0.13																						
1962					1.32	0.13																						
1963					2.02	0.09																						
1964					2.07	0.04																						
1965					2.74	0.33																						
1966					2.01	0.09																						
1967					1.43	0.07																						
1968					1.27	0.15							0.25	0.14														
1969					0.92	0.09							0.24	0.12														
1970					0.93	0.09							0.16	0.11														
1971					0.64	0.07							0.19	0.11														
1972					0.65	0.14							0.11	0.13														
1973					0.34	0.15							0.22	0.15														
1974					0.41	0.17							0.15	0.12			0.96	0.28										
1975					0.33	0.17							0.11	0.13			1.10	0.26										
1976					0.35	0.17							0.03	0.18			1.03	0.24										
1977					0.20	0.25							0.01	0.17			0.90	0.25										
1978			0.18	0.28			1.63	0.30					0.02	0.16			0.88	0.24										
1979			0.30	0.34			0.96	0.40					0.04	0.16			1.01	0.22										
1980			0.25	0.35			1.10	0.33					0.05	0.13			1.54	0.20										
1981			0.40	0.38			1.85	0.21					0.06	0.12			1.15	0.19										
1982			0.06	0.40			1.09	0.29					0.03	0.12			1.42	0.19										
1983			0.09	0.39			0.64	0.23					0.04	0.13			1.50	0.17										
1984			0.06	0.28			0.79	0.24					0.03	0.13			1.27	0.18										
1985			0.02	0.38			0.63	0.13					0.03	0.12			0.86	0.21										
1986			0.25	0.28			1.02	0.20					0.06	0.12			0.86	0.21										
1987			0.16	0.27			0.80	0.14					0.10	0.12			0.76	0.21										
1988			0.09	0.30			1.45	0.78					0.11	0.18			0.63	0.22			1.52	0.88						
1989			0.06	0.31			0.41	0.11					0.12	0.18			0.42	0.24			1.48	1.00						
1990			0.19	0.40			0.65	0.18					0.04	0.16			0.47	0.23			0.50	0.37						
1991			0.15	0.27			1.01	0.28					0.05	0.20			0.44	0.25			0.76	0.43	3.72	0.48	0.35	0.45		
1992			0.10	0.28			0.97	0.25					0.05	0.18			0.44	0.24			0.43	0.27	0.65	0.47	0.40	0.20		
1993			0.13	0.39					1.61	0.17			0.15	0.12			0.35	0.30	1.58	0.12	0.25	0.15	0.68	0.57	0.52	0.51	0.36	0.26
1994			0.08	0.27					3.52	0.37			0.18	0.11			0.52	0.26	0.81	0.14	0.30	0.17	4.08	0.49	0.64	0.96	0.42	0.13
1995			0.07	0.26					1.18	0.21			0.12	0.11			0.73	0.22	1.46	0.12	0.54	0.28	4.15	0.50	0.91	0.66	0.31	0.12
1996	2.56	0.27	0.33	0.26					1.03	0.19			0.10	0.10			0.74	0.24	0.99	0.16	1.86	0.90	0.70	0.47	0.71	0.53	0.17	0.14
1997	3.66	0.19	0.11	0.26					0.99	0.21			0.08	0.10			0.56	0.24	1.15	0.14	1.18	0.55	0.81	0.54	0.70	0.48	0.32	0.10
1998	2.97	0.24	0.13	0.25					1.19	0.21					0.039	0.20	1.42	0.20	0.98	0.17	1.81	0.91	2.42	0.51	0.93	0.59	0.24	0.10
1999	1.10	0.67	0.19	0.25					0.75	0.15					0.062	0.14	0.68	0.22	1.69	0.14	0.58	0.32	4.36	0.50	0.81	0.40	0.18	0.14
2000	3.33	0.20	0.14	0.26					1.62	0.20					0.057	0.14	0.61	0.25	1.26	0.14	0.61	0.43	2.95	0.50	0.25	0.68	0.36	0.13
2001	1.15	0.59	0.17	0.25					1.27	0.20					0.058	0.14	0.71	0.22	0.54	0.16	1.71	0.96	1.76	0.50	0.18	0.68	0.42	0.12
2002	3.35	0.20	0.04	0.26					0.25	0.19					0.055	0.13	0.96	0.20	1.06	0.14	0.08	0.11	2.52	0.52	0.32	0.50	0.48	0.12
2003	2.61	0.26	0.06	0.29					0.53	0.14					0.040	0.15	0.37	0.29	0.57	0.14	1.17	0.75	2.87	0.49	0.83	0.41	0.39	0.13
2004	1.65	0.41	0.11	0.27					0.46	0.13					0.019	0.14	0.93	0.19	0.99	0.12	1.67	1.01	4.28	0.52	0.56	0.85	0.64	0.10
2005	2.17	0.33	0.07	0.32					0.46	0.17					0.034	0.14	1.06	0.19	1.21	0.12	1.45	0.85	3.65	0.49	0.64	0.83	0.61	0.12
2006	1.99	0.37	0.05	0.32					0.98	0.24					0.028	0.14	1.22	0.19	0.81	0.14	1.40	0.85	3.32	0.50	0.40	0.79	0.39	0.13
2007	2.22	0.31	0.05	0.32					0.57	0.24					0.021	0.16	0.61	0.24	0.61	0.13	1.43	0.87	4.87	0.50	0.92	0.50	0.39	0.12
2008	1.85	0.43	0.04	0.33					1.32	0.32					0.010	0.19	0.96	0.22	0.58	0.12	1.17	0.92	3.46	0.49	0.93	0.28	0.44	0.12
2009	0.77	0.91	0.03	0.33					0.82	0.18					0.007	0.18	0.88	0.24	1.07	0.12	0.14	0.16	1.88	0.42	0.15	0.46	0.60	0.13
2010	2.89	0.24	0.11	0.34					0.90	0.32					0.010	0.17	1.05	0.25	0.70	0.12	0.56	0.48	1.85	0.51	0.89	0.44	0.62	0.14
2011	2.67	0.26							0.71	0.14					0.007	0.16	2.01	0.20	1.74	0.12	0.10	0.15	1.37	0.52	0.15	0.23	0.83	0.13
2012	2.97	0.25							0.46	0.25					0.005	0.19	1.61	0.23	1.68	0.11	1.00	0.89	3.36	0.49	1.34	0.46	0.97	0.12
2013	3.62	0.19							0.38	0.22					0.005	0.21	1.08	0.24	1.01	0.11	3.79	3.05	2.84	0.50	2.15	0.78	0.84	0.12
2014	2.95	0.23									2.14	0.32			0.008	0.21	0.96	0.25	1.09	0.12	1.86	1.76	2.91	0.50	0.97	0.83	0.53	0.12
2015	3.30	0.21									1.06	0.32			0.008	0.19	1.42	0.25	1.13	0.12			2.27	0.52	1.18	0.10	0.64	0.13
2016	3.01	0.22									1.06	0.33			0.006	0.20	1.15	0.27	1.09	0.12			2.21	0.49	2.36	0.40	0.53	0.12
2017	3.55	0.19									1.13	0.31			0.006	0.21	1.03	0.35	1.01	0.13			1.17	0.50	1.75	0.35	0.31	0.15
2018											0.84	0.31			0.004	0.23	2.47	0.24	0.88	0.13			1.38	0.49			0.37	0.12
2019											1.88	0.30			0.001	0.56	1.27	0.25	0.95	0.14			2.40	0.49			0.28	0.14
2020											0.64	0.30			0.001	0.33	1.44	0.31	0.47	0.17			1.19	0.51			0.34	0.14
2021											0.31	0.33			0.003	0.43	0.88	0.33	0.44	0.17			2.65	0.49			0.42	0.11
2022											0.33	0.41			0.003	0.63	1.06	0.30	0.62	0.15			2.32	0.50			0.35	0.14
2023											0.60	0.36			0.001	0.71	1.62	0.31	0.85	0.71			2.61	0.49			0.30	0.15

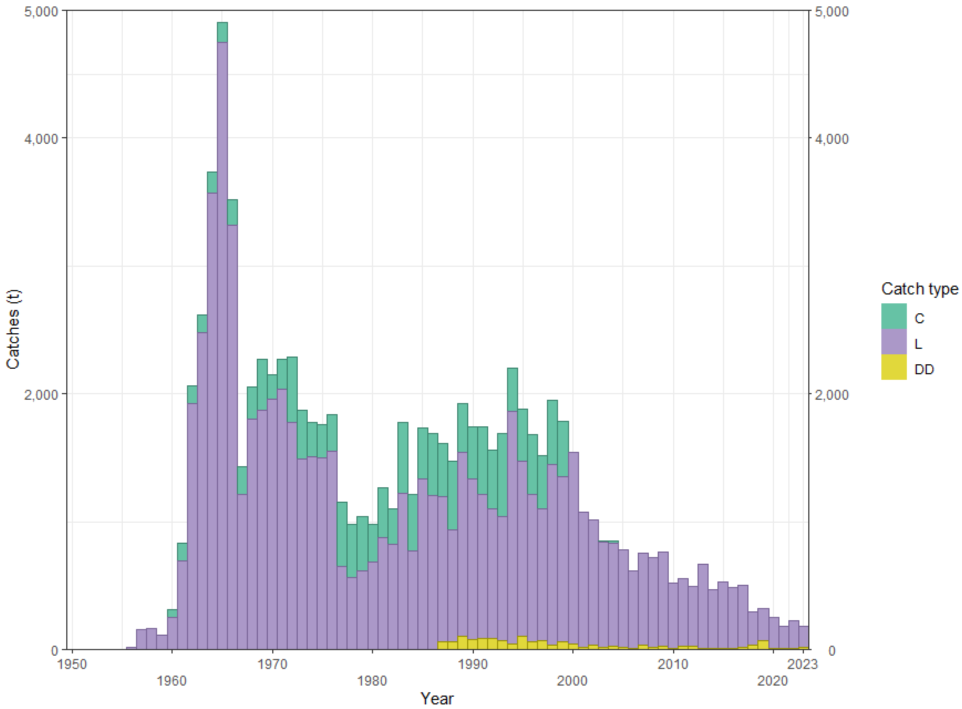

Figure 1. Task 1 Nominal catches (tons) of Atlantic white marlin (WHM) and roundscale spearfish (RSP) by catch type, 1950-2023 (C=catches, L=landings and DD=dead discards).

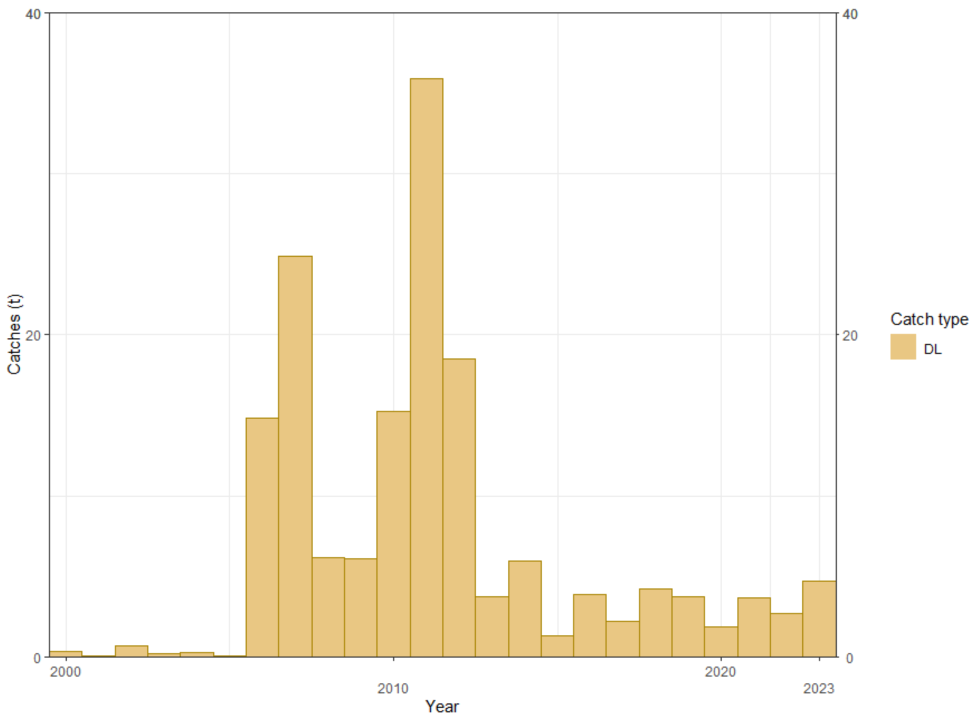

Figure 2. Live discards (DL, tons) of Atlantic white marlin (WHM) and roundscale spearfish (RSP), 2000-2023.

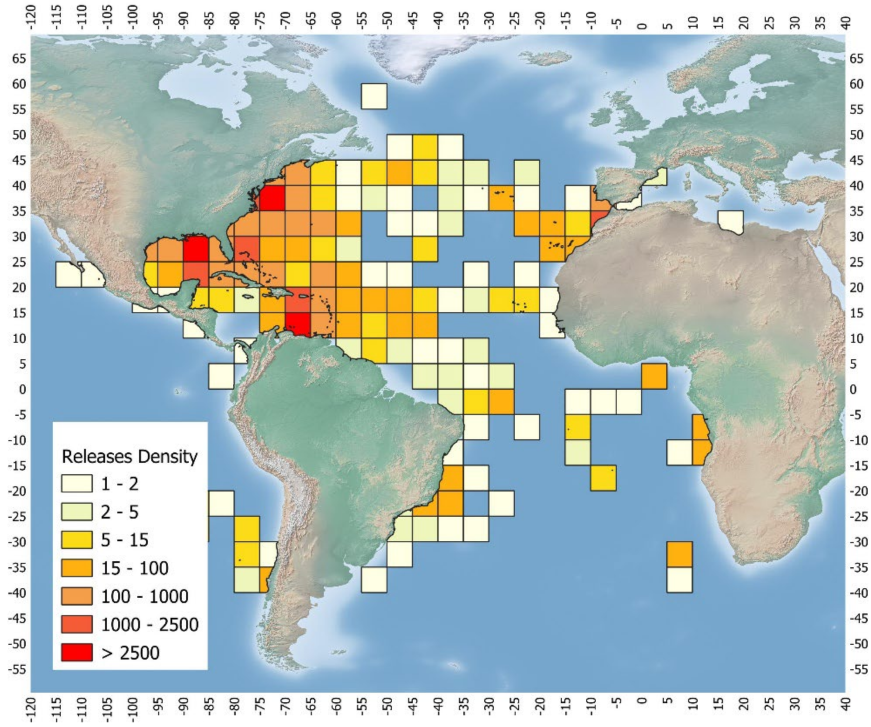

Figure 3. Density of white marlin conventional tags released in a 5x5 square grid, in the ICCAT area.

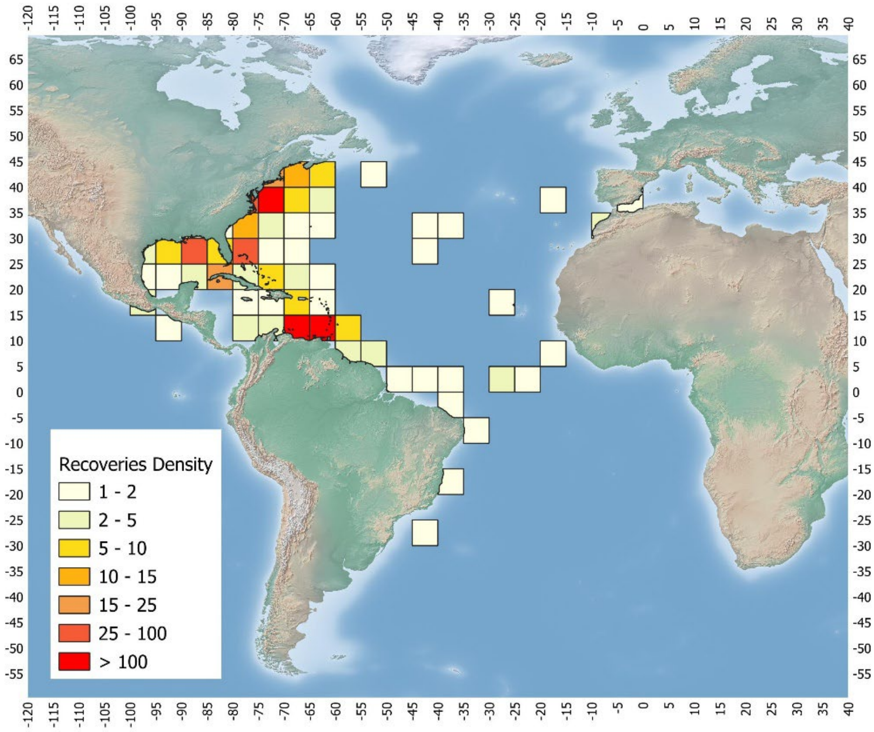

Figure 4. Density of white marlin conventional tags recovered in a 5x5 square grid, in the ICCAT area.

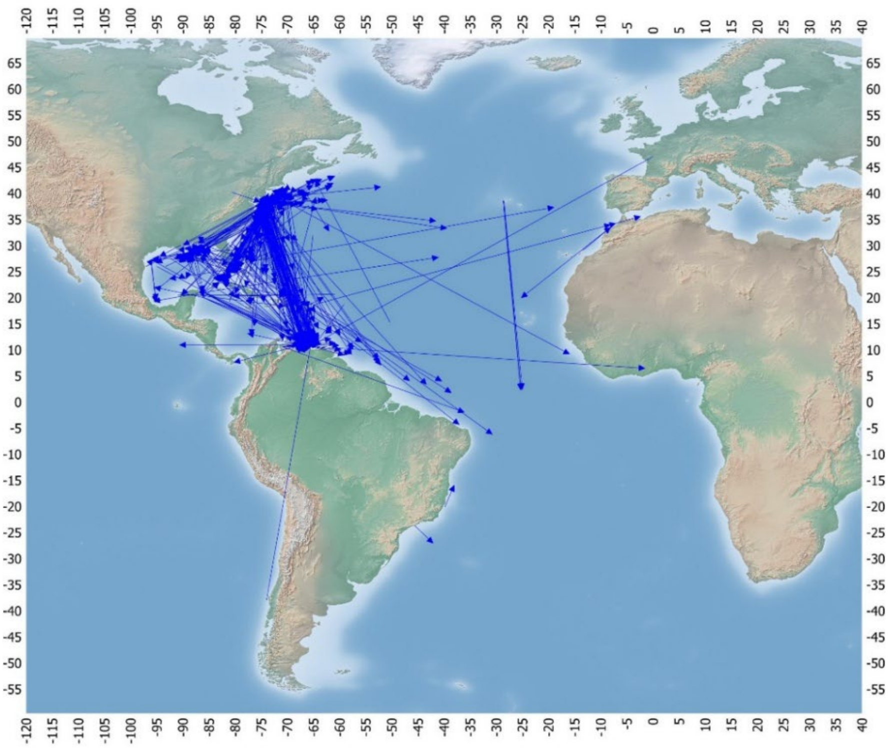

Figure 5. Apparent movement (arrows: release to recovery location) of the white marlin conventional tagging.

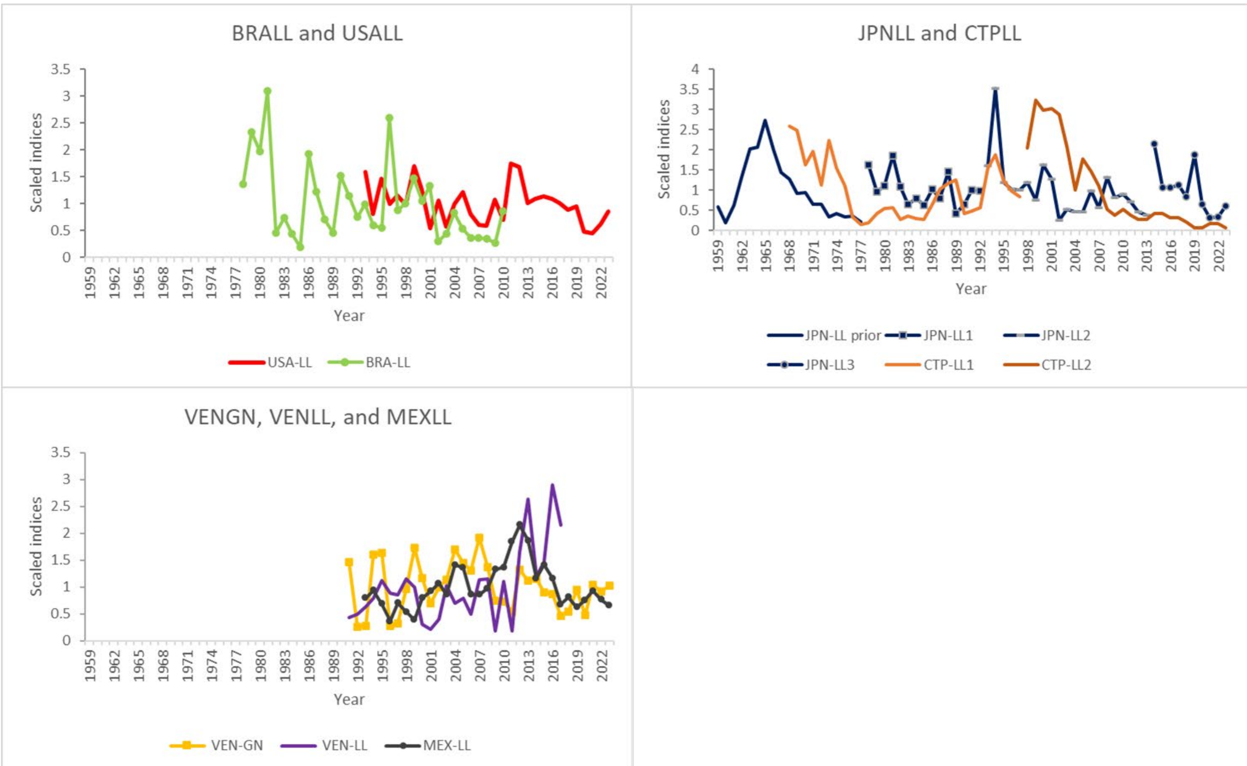

Figure 6. Standardized CPUE series used in the 2025 white marlin stock assessment.

Appendix 1

Agenda

1. Opening, adoption of Agenda and meeting arrangements

2. Review of historical and new information on biology

3. Review of fishery statistics and indicators

    3.1 Task 1 catches and discards data and spatial distribution of catches
    3.2 Task 2 catch and effort
    3.3 Task 2 size data
    3.4 Tagging data

4. Review of available indices of relative abundance by fleet

5. Review of assessment models for evaluation, specifications of data inputs, and modelling options

    5.1 Production models
    5.2 Catch Statistical integrated model Stock Synthesis (SS3)

6. Recommendations

    6.1 Statistics
    6.2 Research

7. Review of responses to the Commission request for the Billfish Species Group

8. Enhanced Programme for Billfish Research (EPBR).

9. Other matters

    9.1 Review of the sailfish taxonomy status
    9.2 New format for Research Plan Budget table

10. Adoption of the report and closure

Appendix 2

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Appendix 3

List of papers and presentations

Number	Title	Authors
SCRS/2025/021	*Istiophorus platypterus* is the valid scientific name for the sailfish in the ICCAT area	Di Natale A., Arocha F., Ngom F., Collete B.
SCRS/2025/029	Methods and estimation of discards for blue and white marlin from the Portuguese pelagic longline fleet in the Atlantic Ocean	Coelho R., Rosa D., Lino P.G.
SCRS/2025/043	Review and preliminary analysis of size samples of Atlantic white marlin (*Kajikia albida*)	Ortiz M., Kimoto A., Mayor C.
SCRS/2025/044	Atlantic white marlin (*Kajikia albida*) standardized catch rates from the industrial longline fishery of Mexico (1993-2023)	Ramirez-López K., Narváez M., Rojas-González R.I., Wakida-Kusunoki A.T., Marín H., Evaristo E., Arocha F.
SCRS/2025/050	Spatio-temporal model for CPUE standardization: application to white marlin caught by Japanese tuna longline fishery from 1959 to 2023	Kai M.
SCRS/2025/051	Update on standardized CPUE of Atlantic white marlin index from the artisanal drift-gillnet fishery operating at the billfish hotspot, off La Guaira, Venezuela (1991-2023)	Narvaez M., Evaristo E., Marin H., Marcano L.A., Arocha F.
SCRS/2025/052	White marlin (*Kajikia albida*) standardized indices of abundance from the U.S. recreational tournament fishery	Lauretta M.
SCRS/2025/053	U.S. pelagic longline indices of abundance of white marlin and spearfish (*Tetrapturus spp*.)	Lauretta M.
SCRS/2025/054	Estimating the catches of the Atlantic white marlin in the Uruguayan pelagic longline fishery	Jimenez S., Forselledo R., Mas F., Domingo A.
SCRS/2025/056	Update on standardized catch rates for white marlin from the Venezuelan pelagic longline fishery off the Caribbean Sea and the western central Atlantic: period 1991-2017	Narvaez M., Marin H., Evaristo E., Gutierrez X., Arocha F.
SCRS/2025/060	Investigating important sources of uncertainty in the 2019 white marlin assessment	Schirripa M.J.
SCRS/2025/061	CPUE Standardization for white marlin (*Kajikia albida*) from the Chinese Taipei longline fishery in the Atlantic Ocean	Su N-J., Sung Y.F.
SCRS/P/2025/015	Summary of available white marlin statistical data	Mayor C.
SCRS/P/2025/016	Billfishes fisheries statistics of São Tomé e Príncipe	Conceição I., Quaresma H.
SCRS/P/2025/017	Catch characteristics and maturity stages of white marlin (*Kajikia albida*) landed by the artisanal fisherman of Cote d'Ivoire	Konan K.J., Diaha N.C., Bahou L.
SCRS/P/2025/018	Tagging summary for Atlantic white marlin (WHM)	Secretariat

Appendix 4

SCRS document and presentations abstracts as provided by the authors

SCRCS/2025/021 - After many years of discussions and according to the most recent scientific papers published, it is now clear that the scientific name of the sailfish adopted by ICCAT in its Convention area (*Istiophorus albicans*) is the synonym of the worldwide-accepted *Istiophorus platypterus*. In particular, the recent genetic studies confirmed that there are no significant differences for justifying two different names for the same species. Therefore, this short paper summarises the recent findings and the solid motivations for updating the name in the ICCAT Convention area and in the ICCAT statistical system.

SCRS/2025/029 - This document presents information to address the ICCAT Commission request for estimation of discards of blue and white marlins (*Makaira nigricans* and *Kajikia albida*) (ICCAT Rec. 19-05). The intent of this paper is to describe the current fishery observer data on marlins, discuss a method and approach for estimating discards of those species, based on observer data CPUEs by area and season. Then, using the overall Portuguese pelagic longline fleet total effort, by year, date and location, we provide preliminary estimates of discards for those species for the years 2012 to 2023.

SCRS/2025/043 - Size samples data of Atlantic white marlin was reviewed, and preliminary analysis performed for its use within the stock evaluation models. Size data is normally submitted to the Secretariat by CPCs under the Task 2 requirements; optionally CPCs can submit catch at size, size samples or both for the major fisheries. The size samples data was revised, standardized and aggregated to size frequencies samples by main gear type, year and quarter. Preliminary analyses indicated a minimum number of 25 fish measured per size frequency sample, with size information since 1970 for the longline, gillnet and rod and reel fishing gears. For Atlantic white marlin, the size sampling proportion among the major fishing gears is consistent with the proportion of the catch since 1970; in general, longline fisheries have been well sampled.

SCRS/2025/044 - Standardized index of relative abundance for Atlantic white marlin (*Kajikia albida*) was estimated using a Generalized Additive Mixed Model (GAMM) using the Delta method. The data comes from the Scientific observer program of Mexico, that registers the activity of the Mexican industrial longline fleet operating in the Gulf of Mexico for the period 1993-2023. The variables considered were year, season, month, latitude - longitude, vessel ID, bait type, bait condition, sea surface temperature (SST), dissolved oxygen concentration (DO), mixed layer depth (MLD), chlorophyll-*a* concentration (Chl*a*) and primary productivity (PP). To assess overall model fitting, diagnostic plots were used, indicating no strong departure from expected for an acceptable model fitting. Predictors for the final sub-model of positive catch rates were year, month, latitude-longitude and sea surface temperature, while covariables for proportion of positive observations were the same but also including bait type. The standardized CPUE shows the highest values in 2004, 2012 and 2015, with an increasing trend from 2006 until 2012, followed by a sustained decline from 2012 onwards.

SCRS/2025/050 - Abundance indices of white marlin caught by the Japanese tuna-longline fishery were estimated using logbook data from 1959 to 2023. The nominal CPUEs were standardized using the spatio-temporal generalized linear mixed model (GLMM) to provide the annual changes in the abundances. The author focused on spatial and interannual variations of the density in the model to account for spatiotemporal changes in the fishing location due to the target changes of tuna and tuna-like species. Based on the long-term changes in operational area and average weight of white marlin, the data was divided into four periods (P1: 1956-1977, P2: 1978-1992, P3: 1993-2013, P4: 2014-2023), and the CPUE was standardized for each period. The estimated annual CPUEs in P1 revealed a moderate increasing trend from 1959 to 1964 and then monotonically decreased until 1977. Those in P2, P3, and P4 revealed a slight decreasing trend. The estimated CPUE using the spatio-temporal model with a large amount of data collected in the wide area in the Atlantic Ocean is very useful information about the spatiotemporal changes in the abundance.

SCRS/2025/051 - An update on the standardized index of relative abundance for Atlantic white marlin (*Kajikia albida*) was developed using a Generalized Linear Mixed Model (GLMM) with a lognormal distribution. The analysis was based on data collected from the Venezuelan artisanal drift-gillnet fishery operating in the billfish hotspot known as "El Placer de La Guaira", located off the central Venezuelan coast, covering the period from 1991 to 2023. The model included year, season, and their interaction as explanatory factors, with season treated as a random effect. Diagnostic plots were used to evaluate model performance, confirming that the final model provided an acceptable fit to the data. The standardized CPUE (in weight) decreased from 2012 to 2019, showed signs of recovery, and remained stable through 2023. The decline in 2020 was likely due to the impact of COVID-19.

SCRS/2025/052 - An index of relative abundance for white marlin in the Atlantic Ocean is presented for the U.S. recreational billfish tournament fishery. The index standardization included year, area, and quarter, with a random tournament effect. The imprecise location of fishing during tournaments was a limitation in standardization, where only the fishing port was known. The standardization corrected for spatial-temporal effort contraction to areas with the highest catch rates, the standardized index was notably lower than observed mean indices for recent years. Overall, the index showed a positive trend over the last three decades.

SCRS/2025/053 - Standardized indices of white marlin/spearfish relative abundance in the Northwest Atlantic Ocean are presented for the U.S. pelagic longline fishery covering years 1993 to 2023. The index is based on scientific observer reported catch, effort, and covariate data associated with individual longline sets. The reporting of white marlin versus spearfish species changed over time (historically all spearfish were recorded as white marlin), and therefore the combined index appropriately corrects for changes in species counts. The standardization model remained unchanged from the prior assessment, and included year, area, quarter, hook type, hooks between floats, night vs. day set, and sea surface temperature. One exception is that sea floor depth was excluded from the final model.

SCRS/2025/054 - The white marlin (*Kajikia albida*) is an oceanic epipelagic species distributed in tropical and subtropical waters of the Atlantic Ocean. In Uruguay, white marlin is incidentally caught by the pelagic longline fleet targeting tunas and swordfish. Identification challenges often result in its classification under the generic billfish category in logbooks, complicating catch assessments. To estimate total annual catches from 2002 to 2012, we applied ICCAT's Bycatch Estimation Tool (BYET) using observer data and logbooks. A model-based approach was used, employing a generalized linear model (GLM) with a Tweedie error distribution to extrapolate observer data to the total recorded fishing effort. In 3,229,149 observed hooks during 2002-2012, a total of 534 white marlins were recorded. The presence and catch rate of white marlin were higher at the beginning of the study period (except for 2002), north of 35°S, during the full moon, in quarters 1 and 3 of the year, at depths between 3000 and 4000 m and in sea surface temperatures between 20 and 25°C. We estimated an average annual catch of 114 individuals, with the highest catch recorded in 2004 (535; 95% CI: 381–689) and the lowest in 2011 (3; 95% CI: 0–10).

SCRS/2025/056 - A standardized CPUE index for white marlin (*Kajikia albida*) was estimated using a Generalized Linear Mixed Models (GLMM) approach, with a delta lognormal distribution which implies modeling for the proportion of positive CPUEs and modeling for the positive observations. Data from the Venezuelan Pelagic Longline Observer Program (1991–2011) and the National Observer Program (2012-2018) were combined for the analysis. Data from the last year of the series (2018) was excluded from the analysis as the number of sampled trips was too low and they did not present reports for white marlin. In this sense, the index is provided from 1991 until 2017. Key categorical variables incorporated included year, season, area, vessel category, depth, and interactions with the year factor were set as random effect terms in the model. Diagnostic plots were assessed to evaluate the overall fit of the model.

SCRS/2025/060 - This work compares the uncertainty in stock assessment results resulting from either varying the assumed productivity parameters (natural mortality and steepness) or the choice of indices of abundance that are included. The results indicate that the choice of indices of abundance that are included has as much, if not more, influence on the estimates of stock status and the derived quantities. The overall recommendation of this work is to refrain from using the two recreational indices and to rely solely on the extensive longline indices of abundance.

SCRS/2025/061 - Catch and effort data of white marlin (*Kajikia albida*) were standardized for the Chinese Taipei distant-water tuna longline fishery in the Atlantic Ocean by period (1968-1997 and 1998-2023) using a generalized linear model (GLM) based on delta approach. The period of 1998-2023 was considered with the information on operation type, i.e., the number of hooks between floats (HBF) in the CPUE (catch per unit effort) standardization of white marlin to address the issue of historical targeting change in this fishery. Abundance indices of Atlantic white marlin were developed for the two periods, which showed almost identical trends to those derived from the entire period (1968-2023). Results were insensitive to the inclusion of gear configuration (HBF) in the model as an explanatory variable. Standardized CPUE trend of Atlantic white marlin started to decrease in the 1970s, with a following increase to a higher level during the 1980s and early 1990s, but dropped gradually from the late 1990s to recent years.

SCRS/P/2025/015 - It summarizes all available statistical information in the ICCAT-DB for the Working Group on Billfishes. It includes Task 1 and Task 2 datasets on billfishes, with a particular focus on WHM, as well as the tools available for easy visualization of this information, updated as of March 22, 2025. Additionally, it highlights key issues requiring the Group's attention to facilitate decision-making.

SCRS/P/2025/016 - *Summary not provided by authors.*

SCRS/P/2025/017 - It analyses the fishing effort, catch variations, size distribution, and gonadal maturity of the white marlin (*Kajikia albida*) caught by the artisanal driftnet fishery in Côte d'Ivoire. Specimens were collected at the fishing harbor of Abidjan between 2016 and 2023. A total of 181 white marlin ranging in size from 120 to 286 cm lower jaw fork length (FL) were sampled. The highest proportions of fish caught have sizes ranging between 155 and 185 cm. This species was globally caught from July to January and the highest proportions were recorded in August-November. The trends in nominal catches and production were similar, with the highest catches occurring in 2017 and the lowest in 2023. The results clearly indicate a decline in catches in recent years, a predominance of individuals smaller than the size at first sexual maturity and a seasonal pattern in catches, coinciding with the upwelling periods.

SCRS/P/2025/018 - It summarizes all available statistical tagging information in ICCAT-DB for the Working Group on Billfishes. It includes the conventional and electronic tagging datasets on Atlantic white marlin (WHM), as well as the tools provided for easy visualization of this information, updated as of March 24, 2025.