REPORT OF THE 2026 ICCAT ATLANTIC SWORDFISH DATA PREPARATORY MEETING
(Online, March 23 to 27 March 2026)

The results, conclusions and recommendations contained in this Report only reflect the view of the Swordfish Species Group. Therefore, these should be considered preliminary until the SCRS adopts them at its annual Plenary meeting and the Commission revise them at its annual meeting. Accordingly, ICCAT reserves the right to comment, object and endorse this Report, until it is finally adopted by the Commission.

1. Opening, adoption of agenda and meeting arrangements

The meeting was held from 23 to 27 March 2026. The Swordfish Coordinator, Kyle Gillespie (Canada), opened the meeting with the Species Group (the Group) and the rapporteurs for the Southern Atlantic and Mediterranean stocks, Luis Gustavo Cardoso (Brazil) and George Tserpes (European Union), respectively. The ICCAT Executive Secretary welcomed and thanked the participants. The Chairman proceeded to review the agenda, which was adopted without changes (**Appendix 1**).

The list of participants is included in **Appendix 2**. The list of SCRS documents and presentations provided at the meeting is attached as **Appendix 3**. The abstracts of all SCRS documents presented at the meeting are included in **Appendix 4**. The following served as rapporteurs:

Sections	*Rapporteur*
Items 1, 10	N.G Taylor.
Item 1.1	K. Gillespie, C. Brown
Item 2-2.3	ICCAT Secretariat
Item 2.4	L. Rueda, K. Gillespie
Item 2.5	L.G. Cardoso, K. Gillespie
Item 3	D. Rosa, R. Borrego-Santos
Item 3.2	D. Rosa, R. Borrego-Santos, K. Gillespie
Item 4.1	C. Mayor, G. Tserpes, L. Rueda, G. Liniers
Item 4.2	L.G. Cardoso, B. Mourato, R. Coelho
Item 5.1	G. Tserpes, K. Gillespie, A. Kimoto, G. Liniers
Item 5.2	B. Mourato, L.G. Cardoso, A. Kimoto
Item 5.3	K. Gillespie, L.G. Cardoso, G. Tserpes
Item 6	L. Rueda, R. Coelho, K. Gillespie
Item 7	K. Gillespie
Item 8	K. Gillespie, L.G. Cardoso, G. Tserpes
Item 9	K. Gillespie, L.G. Cardoso

1.1 Updates from the SCRS and the Commission

The SCRS Chair provided an overview of relevant measures adopted by the Commission in 2025. For the North Atlantic stock, the Commission adopted an exceptional circumstances (EC) protocol in Rec. 25-10. The protocol provides guidance for determining whether ECs exist and whether the implications arising from them is sufficiently severe to warrant revising the advice from the Management Procedure (MP). Rec. 25-09 sets out requirements for use of trapline gear in the ICCAT area. Of relevance to this Group, the Recommendation defines minimum data collection requirements for fisheries deploying the gear.

The SCRS Chair outlined a new effort to characterize the status of requests from the Commission to the SCRS. In the coming months, the ICCAT Secretariat will be working with Species Group Rapporteurs to review and determine the completion status of recent and historical requests for advice from the Commission.

The SCRS Chair reminded the Group of the upcoming Meeting of the Standing Working Group on Dialogue between Fisheries Scientists and Managers (SWGSM) scheduled for late April 2026. The agenda may include ICCAT's Climate Action Plan, and the Chair will be requesting support from Rapporteurs to produce an overview of completed and ongoing work within the SCRS to address climate change (e.g. environmental factors in CPUEs and assessment, climate change robustness tests in Management Strategy Evaluation (MSE) simulations, etc.).

2. Review of fishery statistics

2.1 Task 1 catches data and their spatial distribution

The ICCAT Secretariat presented document SCRS/P/2026/023, which provided a general overview of the available statistical information, as of 18 March 2026, on swordfish (*Xiphias gladius*) in the Atlantic and the Mediterranean. This overview included Task 1 data, comprising nominal catches (T1NC) and live releases (T1NC-DL), as well as Task 2 data, including catch and effort (T2CE), size samples (T2SZ), and catch-at-size (T2CS), in addition to CATDIS estimates. For all these components, the corresponding catalogues and detailed Excel files were presented, together with the available data visualization tools, including interactive dashboards.

The ICCAT Secretariat presented the information corresponding to T1NC, indicating that total nominal catches peaked in the late 1980s, reaching approximately 53,000 t, and have shown a general declining trend thereafter, with total catches for all stocks amounting to 28,546 t in 2024 (**Table 1**). It was noted that longline was the main fishing gear in terms of contribution to total catches, while in the early years harpoon was also of significance, and gillnet fisheries contributed notably during the 1980s and 1990s (**Figure 1**). Furthermore, a shift in the relative contribution of stocks was highlighted, from a clear dominance of the North Atlantic at the beginning of the series (1950s) to a more balanced distribution, with an increasing share of the Mediterranean and a growing importance of the South Atlantic over time. For 2024, reported catches amounted to 10,814 t for the ATN (**Figure 2**), 9,282 t for the South Atlantic (**Figure 3**), and 8,450 t for the Mediterranean (**Figure 4**). Finally, an analysis of the main fleets for the period 1995–2024 was presented, together with the evolution of dead discards, for which data are available from 1991 onwards and which show a significant decrease over the last five years (**Table 2**).

Document SCRS/P/2026/025 was presented by the ICCAT Secretariat proposing to subdivide the Mediterranean sampling areas into four subareas (**Figure 5**), with the objective of replacing the former Task 1 areas and improving the consistency and usefulness of statistical information in the Mediterranean Sea. The ICCAT Secretariat recalled that the proposed delimitation is based on 5° longitude increments, consistent with the current minimum spatial resolution reported in ICCAT datasets (5×5), particularly for forms ST03-T2CE (catch and effort), ST04-T2SZ size sampling, and ST05-T2CS catch-at-size estimations. A finer spatial resolution (e.g., 1×1) would be too detailed compared to the standard reporting resolution for longline fisheries (5×5) and could compromise the consistency of historical data classification.

The Group recognized that the subdivision into four areas represents a significant improvement compared to the current situation, as it provides explicit geographical boundaries instead of historically named areas without a clear spatial definition. It was highlighted that the main objective of the proposal was to enhance the quality and utility of statistics for the main ICCAT fisheries in the Mediterranean.

The Group noted that, regarding the boundary between the western and central Mediterranean, areas such as Sardinia, Sicily and the northern Ligurian Sea may be more consistent with the central Mediterranean in ecological terms, whereas areas such as the Gulf of Lion and the Balearic Islands are more aligned with the western component. Additionally, the Group considered an alternative boundary between the central and eastern Mediterranean, suggesting a line from the southern Middle East to the Libya–Egypt border that may better reflect ecological and fisheries conditions, emphasizing the need for a consistent spatial framework across ICCAT species.

The ICCAT Secretariat commented that this proposal had already been presented in the last meeting of the Subcommittee on Statistics (SC-STATS) and that some of the conclusions from that meeting were that several specific points that might require further refinement, including: i) the delimitation at the Strait of Gibraltar, in order to avoid the artificial allocation of Mediterranean catches to the Northern Atlantic stocks; ii) the position of the boundary between the central and eastern Mediterranean; iii) the treatment of the Sea of Marmara in relation to the Black Sea; and iv) the possible implications for CPCs whose coastlines would be split between two subareas (e.g. in the areas of Tunisia and Libya).

The Group noted concerns regarding the proposed delimitation of the Tyrrhenian Sea, highlighting that significant oceanographic and ecological differences exist with the Strait of Sicily, which may act as a partial barrier for some ICCAT species despite unclear migration patterns. In this context, the Group considered that the current allocation of the Tyrrhenian Sea to the central Mediterranean may need to be reassessed, including its possible inclusion in the western Mediterranean to better reflect regional characteristics.

In conclusion, while there was broad support for the proposed four-area subdivision, the Group agreed that further refinement is needed, particularly regarding boundary definitions and consistency across species. The issue remains pending and will be revisited in future Species Group discussions with the aim of reaching a final agreement.

Document SCRS/2026/033 described the revision of historical swordfish catch statistics reported by the Mexican fishing fleet in the Gulf of Mexico. The analysis was based on observer data and national information systems, showing revised catch estimates with low values in the early years, a peak around 2017, and more stable levels in recent years. The comparison with previously reported ICCAT data indicated substantial revisions for the period 1993–1995, improvements in validation for 1996–2000, and minimal differences from 2001 onwards. The document also highlighted improvements in data integration and standardization, as well as plans for further methodological and data enhancements.

During the discussion, the Group agreed to the proposed data revisions. It was noted that, for procedural reasons, these revisions will be subject to final review and approval by the SC-STATS at its upcoming meeting in September 2026.

Document SCRS/2026/053 presented statistics on swordfish bycatch from industrial, semi-industrial and artisanal fisheries in Guinea for the period 2010–2025. The document described the relative contribution of the different fleet segments, highlighting the increasing importance of the artisanal fishery and the emergence of the semi-industrial fishery since 2021. It also identified seasonal patterns in catches, with higher values occurring between March and May, and noted recent improvements in data collection and species identification supported through the ICCAT/Japan Capacity-Building Assistance Improvement Project (Phase 3) (JCAP-3).

During the discussion, the Group acknowledged the efforts to compile and improve swordfish bycatch data for Guinea and noted that these represent new information for this fishery. Questions were raised regarding the extension of these efforts to other species, the temporal coverage of the data, and the geographical distribution of the catches, particularly in relation to stock boundaries.

The Group also discussed uncertainties regarding the origin and reporting of some catches, including the potential for double counting in the case of foreign fleets operating under agreements. It was noted that the data are based on national statistics and observer programmes, but that their reporting status within ICCAT requires clarification. A correction was made regarding the magnitude of artisanal catches reported for 2025. Considering these issues, the Group agreed to further review the data after the submission and examination of the corresponding statistical forms, with a view to taking a final decision on their inclusion in the ICCAT databases at the next meeting of the Group in September 2026.

Document SCRS/2026/046 presented estimates of swordfish discards from the EU-Spain longline fleet operating in the western Mediterranean, using the Bycatch Estimator Tool (BYET). The analysis was based on observer data collected between 2015 and 2024, covering 907 monitored fishing trips, combined with logbook data to estimate total fishing effort. Discards were estimated using model-based approaches considering factors such as fleet, year, quarter, and spatial distribution, with results indicating that discarding has increased in recent years, particularly following the change in minimum landing size in 2017. The study also showed that discard estimates obtained with the BYET are higher than those derived from currently applied non-model-based methods, suggesting that total catches and fishing mortality may be underestimated in current reporting frameworks.

During the discussion, the Group noted the importance of improving estimates of swordfish discards, particularly for their use in stock assessment. A question was raised regarding the spatial resolution of the data used in the analysis, noting that the use of 5×5° cells may be too coarse for Mediterranean fisheries, where finer-scale information is typically preferred.

It was clarified that, while observer data are available at a finer spatial resolution (set level), historical logbook data lack detailed spatial information, which limited the analysis to 5×5° resolution and constrained the time series to start in 2015. It was also noted that, although reporting at 5×5° resolution is acceptable for longline fisheries, more detailed spatial resolution would be desirable if available.

The Group acknowledged the advantages of the BYET as a robust statistical approach and encouraged its broader application. It was suggested that future analyses could combine existing approaches for fleets lacking specific estimates, while promoting the use of BYET by CPCs. The Group agreed on the need to encourage CPCs, particularly those that have participated in related capacity-building activities, to apply this tool and to present results in future meetings.

SCRS/P/2026/030 presented a preliminary study examining *Xiphias gladius* landed at Damietta (Egypt) in summer–autumn 2025, describing size structure, condition, and length–weight relationships (b = 2.374, indicating negative allometric growth) for 69 individuals, alongside catch and catch per unit effort (CPUE) patterns from targeted and bycatch fisheries for albacore tuna. Results showed peak targeted catches and CPUE in August–September (with differences driven by fishing effort), while bycatch peaked in July, highlighting the need for additional data to support biological characterization and stock assessment.

The Group thanked the presenter and noted its interest in receiving additional information from Egypt, as well as in collaborating on the preparation of biological samples.

2.2 Task 2 catch, effort and size

During the presentation of document SCRS/P/2026/023, the available data for swordfish were provided, including Task 2 catch and effort (T2CE) datasets, as well as Task 2 size samples (T2SZ) and catch-at-size data (T2CS), together with their corresponding detailed catalogues and data visualization tools. The ICCAT Secretariat highlighted the overall availability and structure of these datasets, including long time series of size data, as well as existing limitations in data coverage and consistency across fleets, areas and years for the North Atlantic stock (**Figure 6**), South Atlantic stock (**Figure 7**), and the Mediterranean (**Figure 8**).

In particular, issues related to data completeness and resolution were noted. This included document SCRS/P/2026/030 (5×5° grids for longline fisheries and 1×1° grids for other gears), while acknowledging that higher spatial resolution is desirable when available. In addition, inconsistencies in size data reporting due to the use of different measurement types were highlighted. The presentation also recalled that T2CS remain optional, which contributes to gaps in the overall availability of size-structured information.

The ICCAT Secretariat presented document SCRS/2026/036 which reviewed and conducted a preliminary analysis of T2SZ for South Atlantic and Mediterranean swordfish, with the aim of preparing standardized inputs for stock assessment models. The size data, covering the period 1970–2024, were compiled, cleaned, and aggregated by year, quarter, and main gear type, including the removal of duplicates and outliers and the standardization of size measurements to a common metric. The analysis indicated that size sampling is generally consistent with catch distribution across gears, with longline fisheries accounting for the majority of samples. Minimum sample sizes of 30 and 15 fish per size-frequency sample were proposed for the South Atlantic and Mediterranean stocks, respectively. The results also showed that size distributions are broadly consistent across areas, while differences were observed between stocks, with smaller mean sizes in the Mediterranean compared to the South Atlantic.

Document SCRS/2026/049 presented a revision of historical size distributions of swordfish caught by the Mexican longline fleet in the Gulf of Mexico, based on observer data collected between 1993 and 2024. The analysis included 24,522 records of individual measurements (lower jaw fork length, LJFL), allowing the characterization of size distributions and identification of dominant size classes. Results indicated that most specimens fall within the range of approximately 120 to 170 cm LJFL, with relatively few very small or very large individuals, and an overall mean size of 150–160 cm. The study highlighted the potential for these data to improve the characterization of catch composition and to support future analyses of temporal trends in size structure.

The Group acknowledged the quality of the analysis and the value of the historical data recovered, noting the potential of these data to support further work on discard estimation and methodological comparisons. The Group encouraged continued analyses and welcomed plans to present additional results in upcoming meetings.

The Group endorsed the work and recommended that the data be submitted through the official reporting formats, to be reviewed at the next meeting of the Group in September 2026 and subsequently considered by the SC-STATS.

2.3 Tagging data

The ICCAT Secretariat presented SCRS/P/2026/024 which provided a summary of swordfish conventional and electronic tagging updated.

For conventional tagging, 20,366 tags were deployed and 815 recovered since the beginning of the different tagging programs reported to ICCAT. **Table 3** shows releases and recoveries per year, and **Table 4** shows the number of recoveries grouped by number of years at liberty. Three additional figures summarise the geographical distribution of the swordfish conventional tagging available in ICCAT. The density of releases in 5x5° squares (**Figure 9**), the density of recoveries in 5x5° squares (**Figure 10**), the swordfish apparent movement (arrows from release to recovery locations) shown in **Figure 11**.

Regarding electronic tagging, a total of 303 deployed tags and 235 data transmissions have been reported. In this context, the ICCAT Secretariat reported that an analysis of the performance of Pop-up Satellite Archival Tags (PSATs) deployed within ICCAT electronic tagging programmes, focusing on Wildlife Computers miniPATs was recently conducted. It was noted that the latest versions of the PSATs showed increased reliability and address historical issues related to battery failures. In addition, the ICCAT Secretariat presented a case study showing a significant improvement in both the quantity and quality of the data transmitted by using the KINÉIS satellite constellation instead of ARGOS.

Additionally, two swordfish dashboards were prepared to examine dynamically and interactively the tagging data. The dashboards for the conventional tagging and electronics tags metadata are published on the ICCAT website.

The Group noted that tagging data are essential for improving knowledge on stock structure, movements, and mixing, and emphasized their importance for identifying priority areas for future tagging activities and resource allocation.

2.4 Results from trapline gear studies

Paper SCRS/2026/016 presented the ongoing results of a pilot project on the use of traplines in the EU-Portugal pelagic longline fleet operating in the eastern Atlantic. Species composition differed markedly between terminal hooks and traplines, with traplines capturing almost exclusively swordfish. Swordfish CPUEs were higher in traplines compared to hooks, while CPUEs of pelagic sharks were significantly higher in hooks. To date, catches of marine turtles or other vulnerable taxa have not been recorded in traplines. Continued monitoring and evaluation of this new terminal gear modification is ongoing, with this pilot project extending until the end of 2026.

The Group raised a question regarding the observed sizes of the swordfish, specifically whether the results refer to the entire longline gear or specifically to the terminal gear (i.e. traplines). The Group noted that it is important to distinguish whether swordfish were caught on hooks or on traplines. The authors clarified that the data are recorded at the individual level, distinguishing between trapline and hook catches. This level of detail is available through the observer database, while it is more difficult to obtain from logbooks. Nevertheless, for the pilot project the captains were instructed to measure individuals and also to separate them depending on the capture method, so this information is also reflected in the logbooks. The Group noted that, once official logbooks are used, it may be more challenging to maintain such detailed information. It was clarified that, for the pilot project, the logbooks were specifically designed to account for these details.

The Group suggested that, when both hooks and traplines are used within the same set, it would be useful to have information on the proportion of each gear type at the set level. It was confirmed that this information is available and can be calculated. The authors recommended that rather than the proportions, the exact number of traplines and hooks be recorded by set.

The Group asked for further clarifications about the type of gear used (steel or nylon) and the bait employed. The authors explained that both nylon and steel gangions are used. For traplines, fishers typically use artificial bait, sometimes alone or combined with a small number of mackerel. The Group also asked about the observed differences in the sizes of blue shark with respect to swordfish. The authors commented that there is no clear explanation for the observed differences in sizes of blue shark and swordfish, but it was noted that the sample size for blue shark is much smaller than for swordfish.

The Group inquired about the use of lights in the traplines, and authors clarified that LED lights are not used.

Due to the reduction of catches of blue shark when using traplines, the Group raised the issue whether fishermen will be willing to reduce blue shark catches. The authors pointed out that fishermen do not rely exclusively on traplines; rather, they use a flexible strategy depending on season and area, sometimes targeting more swordfish and at other times targeting blue shark more. Fishermen may also benefit from cost savings associated with traplines, as they use artificial bait and reduce bait expenses.

The Group discussed the different capture mechanism of traplines and how this could affect CPUE and species composition, potentially making them a distinct fishing gear compared to hooks.

The Group noted that this pilot project follows a request from the Commission and all CPCs are encouraged to implement similar projects.

The authors further clarified that the pilot project began in 2025, although fishermen had already been experimenting with traplines for a few years before that, initially with very basic configurations. Since then, the design has improved significantly and become more efficient. It was added that, in a second phase of the project, it would be beneficial to conduct scientifically based designed experimental trials on traplines.

SCRS/2026/035 assessed the potential influence of the ring-shaped branch-line/traplines (Meka-ring) on swordfish CPUE using Japanese longline fishery data collected in the Atlantic Ocean between 2020 and 2025. In the North Atlantic, Meka-rings were deployed only once by a single vessel in 2022, resulting in the capture of just one swordfish. Given this extremely limited use, the effect of Meka-rings on CPUE during the study period was considered negligible. In the South Atlantic, one vessel continuously employed Meka-rings from 2021 to 2024 and recorded measurable swordfish catches over multiple years. However, the proportion of sets using Meka-rings remained very small relative to the overall fishing effort. Consequently, their influence on standardized CPUE estimates was expected to be limited. Overall, across both North and South Atlantic regions, the actual utilization of Meka-rings by Japanese longline vessels during the study period was minimal, and their effect on swordfish CPUE is therefore considered marginal.

The Group asked for further clarifications on the target species for this longline fleet. It was clarified that only one vessel in the North and one in the South were using the traplines. It was further explained that when targeting albacore, sometimes traplines are used, so other species may occasionally be caught, but swordfish are never specifically targeted, although there is some uncertainty about this.

The Group asked about the year 2025, specifically whether the vessel that previously used the traplines was still fishing or simply chose not to use them. The authors informed the Group that usage of traplines may vary by fishermen, but the general understanding is that they stopped using them.

The Group noted that the SCRS needs to present results of their analysis of traplines by 2028, so it is important to identify differences in the use of traplines by fleet and to include information on the target species as well as the fleets, with data reported by both fleet and target species. Information on bycatch should also be provided.

SCRS/2026/047 provided an exploratory analysis on the use of traplines by the EU-Spain Mediterranean fleet targeting swordfish (surface longline, meso-pelagic, and bottom longline). Information on the three metiers was analysed between 2023 to 2025 with and without traplines. The results showed that larger sizes of swordfish were captured with traplines for the surface and bottom longline, as well as a reduction of discards. Comparison of CPUEs with hooks and traplines showed contrasting results for the three metiers. In addition, there was a reduction in the proportion of bycatch species, with a reduction also in the different species bycaught for the surface and bottom longline, whereas the number of different species bycaught increased in the mesopelagic longline when traplines were used. These results are considered to be preliminary, and more analyses need to be conducted.

The Group noted the importance of this work for understanding catch rates and selectivity for traplines among the different gear metiers. The Group suggested that statistical tests were needed before drawing conclusions, especially given the inconsistent proportion of sets using traplines in the data set.

The Group requested more information on the economic implications of using the various gear configurations. The author noted that this information was not available.

The Group asked whether there was overlap in gear use throughout the fishing season. The author clarified that there was limited temporal overlap among the metiers.

SCRS/2026/051 presented the results of a pilot project conducted in 2025 to evaluate the use of traplines in the EU-Spain longline fishery targeting swordfish within the ICCAT area. The study was based on data collected from three vessels of the Atlantic long-distance fleet (ATL) and thirty-seven vessels from the Mediterranean fleet (MED), using additional logbooks and onboard observers.

The Group inquired about the fishing operations when traplines are used. The authors explained that during fishing operations with traplines, these need to remain in the water as long as possible, requiring a longer soak time than hooks, so the engines are stopped when fishing with traplines.

The Group inquired about the cost differences between hooks and traplines. The authors explained that the use of traplines helps reduce expenses on bait, fuel, and hooks.

The Group noted that the actual CPUE for traplines requires further discussion and study before determining whether the gear is desirable for widespread usage. Regarding CPUE, it was explained that fishermen are not particularly concerned, as each captain has an authorized quota for swordfish. The authors clarified that fishermen appreciate that traplines reduce discards and have lower costs. As regards traditional hooks, losses of hooks during each fishing operation also result in additional costs.

2.5 Plan for intersessional work on data improvements

After reviewing available Task 1 and 2 data the Group agreed that no further catch and size data were required to support assessment work. The Group noted significant data gaps for discard reporting and recommended that the ICCAT Secretariat complete a discard estimation analysis for the Mediterranean to supplement discards in the official ICCAT records. This analysis should follow the same (or similar) methods to Ortiz (2020). An estimate for EU-Spain is not required as an analysis was provided in SCRS/2026/046. Discard estimation for the South Atlantic stock assessment models will follow methods described in Schirripa (2022).

3. Review of new and historical information on biology

3.1 Swordfish Year Programme (SWOYP) updates and new results

Document SCRS/2026/045 presented results on a habitat model for the swordfish yolk-sac larvae (YSL) using TUNIBAL surveys and environmental variables in the western Mediterranean. Spawning showed strong affinity for warm waters (>24°C) and intermediate salinity values (37.3–37.8), in the waterfront between Atlantic and Mediterranean waters. Environmental and phenological indicators show an increase in the suitability of reproductive habitat, both in intensity and spatial extent, and that the spawning season is occurring earlier in the year.

It was noted that changes in climate may lead to different responses. With fish being spawned earlier in the year, there is the potential for recruitment to the fishery to start earlier. It was also noted that the potential effects of climate change in later phases of swordfish life cycle may introduce higher uncertainty in the stock dynamics. The Group showed interest in continuing to have updates of this work.

Document SCRS/2026/041 presented results on Phase 7 of the biology program under the SWOYP. Updated results were presented for reproduction and maturity. These were based on histological staging of gonads, age validation and growth modelling derived from otolith readings, and genetic analyses encompassing population structure and epigenetic ageing.

The Group acknowledged the great effort being conducted in this project through all its phases and highlighted the importance of updating parameter estimates for the different stocks. Additionally, it was noted that past analyses of sex ratio by area and temporal strata have been conducted showing different behaviour of males and females. The Group noted this work could be revisited and updated with detailed information as was done to describe the size distribution of swordfish in the Atlantic Ocean.

SCRS/P/2026/021 presented results on age and growth using otoliths, 927 otoliths were collected from three stocks. Using a frequentist approach, the von Bertalanffy model provided the best fit for both Atlantic stocks and produced relatively low L_{inf} but high growth rates (K). Using Bayesian methodology and applying informative priors increased L_{inf} toward published values while K remained amongst the highest reported.

The assignment of samples to the stock of origin was discussed. For this work the current stock boundaries are not being used, instead, the study used a combination of the stock boundaries and information from some samples used on genetics to determine stock of origin.

SCRS/P/2026/018 presented a new growth curve for South Atlantic swordfish stock. This curve was developed based on extensive sampling throughout the distribution of the swordfish fishery. The annual deposition of growth bands in anal fin spines has been validated. These findings offered valuable biological parameters for the population assessment, which is essential for understanding the health of the population and making informed decisions about its future.

The Group acknowledged the important contribution of this work given the spatial distribution of the samples and the sampled size range. It was highlighted that when working in highly migratory species, having collaborative efforts is of the utmost importance, not only for age and growth but also for reproduction, genetics, and other studies. It was proposed that the data presented could be included in a collaboration with the SWOYP to produce a combined growth curve. It was noted that in the Stock Synthesis model, growth data could be inputted in different ways; in this manner, the growth curve could be estimated in the assessment model.

SCRS/2026/055 presented reproduction information for swordfish in the Western Mediterranean Sea. Updated results estimate that females reach L_{50} at 136.5 cm and L_{90} at 148.2 cm, with spawning activity occurring primarily from June to August. Results highlight the effect of different methodologies on the estimate of L_{50} and the need for expanded sampling to support sustainable management.

The Group acknowledged the update of the estimates of female maturity in the Mediterranean Sea, noting this is an improvement from previous work. It was noted that further improvement could come from the availability of samples from the Eastern Mediterranean as it is suspected that L_{50} in that area could be even smaller than in the Western Mediterranean.

SCRS/P/2026/029 showed an update on the genetic component of the SWOYP. A total of 814 swordfish were analysed revealing clear genetic separation between Mediterranean and Atlantic stocks, as well as differentiation between North and South Atlantic groups with evidence of mixing in the BIL94B area. Within the Mediterranean, allele frequency patterns identified two main genetic clusters (Central vs. Eastern Mediterranean) and showed that Western Mediterranean swordfish display intermediate profiles indicative of a transition and admixture zone.

It was noted that large amounts of information are being produced in the different components of the SWOYP and that the information about the different areas must be consolidated to provide the best scientific outputs.

Document SCRS/2026/057 reported the outcomes of the 2025 ICCAT tagging campaigns conducted in the Gulf of Guinea, specifically in the seas surrounding São Tomé Island, São Tomé e Príncipe. The objective was to place electronic tags on swordfish, billfish, and sharks to support ongoing analyses on distribution, diving patterns, and habitat use for these ICCAT managed species. Overall, a total of 10 trips were conducted using trolling and buoy gears. Two sailfish and one blue marlin were successfully tagged.

The Group acknowledged the work conducted and supports its continuation because information on horizontal and vertical movements for swordfish in this area is scarce.

3.2 Updates to biological parameters

The Group reviewed the available information on age and growth and reproduction for the South Atlantic stock and Mediterranean stock (the table of parameters used in assessment modelling is listed in **Table 5**).

Regarding the South Atlantic, the Group decided to update the maturity L_{50} for the assessment modelling based on information presented in Borrego-Santos *et al.* (2025). In addition, the Group decided to have different scenarios for growth, using a spine-based growth curve and an otolith-based curve. Specifically, the Gompertz fit in Quelle *et al*. (2026) and the Bayesian fit in SCRS/P/2026/021 were selected. It was noted that additional samples from Uruguay (N = 45) had become available and could potentially be used to produce a new estimate of L_{50} for this area. However, due to time constraints, the Group agreed to retain the value presented in Borrego-Santos *et al.* (2025) and to consider updating it in the future if deemed relevant.

For the Mediterranean, the Group decided to maintain the spine-based growth curve by Tserpes and Tsimenides (1995); while updating the L_{50} to the values presented in SCRS/2026/055. The potential inclusion of samples from EU-Cyprus for estimating L_{50} was discussed; however, these were staged using a different methodology. Therefore, it is not possible to combine the data with Borrego-Santos *et al*. (2026). EU-Cyprus will confirm the availability of the histological slides and if available, these can be restaged using the current methodology and incorporated in future analysis.

4. Review of available indices of relative abundance

4.1 Mediterranean stock

Four documents describing longline CPUE standardizations and associated time series were presented to the Group for the swordfish Mediterranean stock, corresponding to the following: EU-Greece, EU-Italy, EU-Spain, and Morocco.

SCRS/2026/039 presented standardized biomass indices for Greek surface longline fisheries in the eastern Mediterranean from 1987 to 2024. This index, previously used in assessments, indicated that recent standardized CPUE estimates were among the lowest estimated.

The Group asked if there were any known reasons for the estimated series dropping in the three final years of the series, specifically regarding fishing strategies or area-specific dynamics reflected in the data. The author responded that the dataset is not based on spatially balanced sampling, noting that the Levantine region had fewer samples in these final years. However, the sampling region was considered in the standardization process. Additionally, oceanographic anomalies may have influenced the estimates. The author further clarified that recent changes in fleet behaviour include a shift in activity towards albacore rather than moving further East.

The indices were obtained from the fitted model using marginal means, following the usual procedure. However, the Group noted that caution is required when applying this approach in the presence of a continuous random effect variable, as the coding of that variable can substantially influence the estimated marginal means. Such coding has the potential to introduce bias into the resulting estimates. It was made clear that in the present case, this specific effect balances out and sums to zero, leaving the marginal means unaffected.

The Group raised some concerns on the way a variable describing technological creep is introduced in the model, arguing the model could potentially assign changes in the population to the effort creep. The author clarified that this variable helps to stabilize the model, and that it has little effect on the overall fit.

It was made clear by the author that the data used to fit the model does not include sets that use traplines. Their usage in this fleet began in 2025 and it is estimated that roughly 25-30% of the boats use this gear.

SCRS/2026/042 provided a standardized index of swordfish abundance produced from CPUE data from the mesopelagic longline fisheries operating in the Ligurian Sea. It is a yearly time series that covers the period 2010-2023. A Generalized Linear Model (GLM) was used to produce the standardized index, using data prior to the introduction of traplines in the fleet.

Upon a request for clarification by the Group, the author indicated that the segment of the population that the mesopelagic fleet catches corresponded to large individuals.

The Group inquired about the nature of the soak time variable, and the author clarified that it is a categorical variable taking multiples of 24 hours as values. In a more advanced setting, this variable could be used along with the time of the day as explanatory variables or as an interaction in order to explain catchability.

The presentation of the document included a short time series (2023-2024) of nominal CPUE with data associated to the use of traplines by the mesopelagic longline fleet. The Group discussed the behaviour that swordfish may learn to avoid the fishing gears with time, which can affect the CPUE introducing changes in catchability. It can be explained by the species learning to avoid gears introduced. The slight 2023-2024 decline in nominal CPUE for the traplines combined with mesopelagic longlines could be attributed to this behaviour.

SCRS/2026/048 updates the standardized abundance index of swordfish (*Xiphias gladius*) in the Moroccan Mediterranean longline fishery (2012–2024) using a Generalized Linear Mixed Model (GLMM) based on catch and effort data. The results show a decline after 2012 followed by a relative stabilization since 2017, suggesting an effect of management measures. These findings contribute to stock assessment and highlight the importance of continuous monitoring to support sustainable management.

The Group reviewed the explanatory variables included in the model, noting that they account for both annual and seasonal effects, but the model does not incorporate other potentially relevant factors, such as spatial, operational, or technological variables. They requested additional clarification about the estimation of the annual index, particularly given that year is specified both as an interaction with month in the random component of the model, and a fixed effect.

Furthermore, the Group observed that the standardized and nominal CPUE series display very similar trends. They also inquired about the number of fishing operations conducted on each fishing trip, especially considering that trips last several days.

SCRS/2026/029 presented updated standardized abundance indices for the EU-Spain surface longline fishery targeting swordfish in the western Mediterranean for the period 1988-2024. Recent years (2019–2024) showed moderate CPUE values. Both series (number and biomass) exhibit notable annual fluctuations with no clear long-term trend, suggesting the stock has remained at intermediate abundance relative to historical levels.

The Group acknowledged the importance of the EU-Spain series for the Mediterranean assessment but requested clarification on the metiers used in the CPUE standardization. They asked for the data to be presented by metier and recommended that the bottom longline metier should not be included in the standardization. In response, the authors clarified that the bottom longline metier was not used in the CPUE standardization; only surface and semi-pelagic longline metiers were considered. Spanish scientists further clarified that there is a bottom longline specific metier targeting swordfish in the Spanish Mediterranean, which should not be confused with other bottom longline fisheries targeting different demersal species. They also noted that the EU–Spain has been annually reporting catches, as well as dead discards of swordfish, for this metier in Task 1 NC, coded as LLPB.

The Group inquired about the inclusion of additional explanatory variables that may significantly influence the standardization process. They noted that the Rebuilding Plan could affect CPUE trends. The authors acknowledged this possibility and indicated that sensitivity analyses could be conducted to evaluate its impact.

Finally, the Group requested clarification on which data were excluded from the series used for standardization. The authors explained that sets conducted with traplines were also excluded from the analysis.

4.2 South Atlantic stock

Six documents describing longline standardized CPUEs and associated time series were presented to the Group for the South Atlantic swordfish stock, corresponding to the following CPCs: Brazil–Uruguay (combined), EU-Spain, Japan, South Africa, and Chinese Taipei, as well as one multi-fleet collaborative index combining six data sets (Brazil, Chinese Taipei, EU-Portugal, EU-Spain, Namibia and South Africa).

The Group noted that all major longline fleets operating in the South Atlantic were represented, and that most indices previously used in earlier assessments had been updated and extended to 2024. In particular, the inclusion of a combined Brazil–Uruguay index and a multi-fleet collaborative index represent a substantial improvement in spatial coverage and integration of available data. The Group welcomed the continued effort for CPUE standardization studies and the high level of participation by CPC scientists, including the collaborative approaches to develop joint analyses across fleets.

SCRS/2026/018 presented updated standardized CPUE indices in number and weight for the Spanish LL targeting swordfish in the South Atlantic for the period 1989–2024. The indices were estimated using GLM procedures consistent with previous analyses, incorporating temporal, spatial, gear, and targeting-related factors. The standardized CPUE series showed a relatively stable trend from the early 1990s to the mid-2000s, followed by a gradual increase up to around 2017, a slight decline until 2020, and a renewed increase in recent years. The mean weight remained stable throughout the time series.

The Group noted the consistency between CPUE indices in number and weight, suggesting that recent increases are primarily driven by changes in catch rates rather than fish size.

SCRS/2026/034 presented standardized CPUE indices for the Japanese tuna longline fleet operating in the South Atlantic for the period 1962–2024. Given limited information on gear configuration and interannual changes in mean swordfish weight, the data were divided into three periods (Early: 1962–1975; Middle: 1976–1990; Late: 1991–2024), and CPUE standardization was conducted separately for each. The index was estimated using a spatio-temporal GLMM framework, incorporating spatial and temporal variation to account for changes in fishing distribution and targeting practices. The standardized CPUE series showed high values in the early 1960s, followed by a sharp decline in the late 1960s, moderate variability during the 1970s–1980s with a peak in the mid-1980s, and generally lower levels from the 1990s through the 2010s, with a slight increase in recent years.

The Group noted that the extended time series provides valuable information on early stock dynamics and spatial distribution patterns, which may be informative for stock assessment, particularly for estimating initial conditions. The Group also acknowledged the use of a spatio-temporal modelling approach to account for changes in fishing patterns over time.

SCRS/2026/050 described a delta-lognormal Generalized Additive Mixed Model (GAMM) that was fitted to 16,161 longline sets from the South African pelagic fleet (2004–2024). The analysis produced a standardized CPUE index for swordfish in weight. The model incorporated year, month, fishing tactic (clustering), a spatial smoother, and vessel as a random effect, with covariates selected via Akaike Information Criterion corrected (AICc). Marginal means were used to isolate the annual abundance trend, which indicated stable relative swordfish abundance since 2020, with catch rates peaking in winter (July–October).

The standardized CPUE series showed moderate interannual variability, with a decline in the early 2010s followed by an increase toward the late 2010s, reaching a peak around 2019, and remaining relatively stable thereafter.

The Group noted that the index is based on a well-established delta-lognormal modelling framework that accounts for zero-inflated catch data and incorporates key operational and spatiotemporal covariates. The inclusion of fishing tactic and spatial effects was considered important to account for changes in targeting behaviour and fishing distribution over time.

SCRS/2026/052 developed standardized CPUE indices for swordfish using combined catch and effort data from Brazilian and Uruguayan pelagic longline fleets for the period 1994–2024. The index was estimated using a delta-lognormal GLM framework, incorporating temporal, spatial, operational, and targeting-related covariates. Two model formulations were evaluated, with and without vessel effects. Both models showed similar temporal patterns, with higher CPUE values in the mid-1990s, followed by a decline in the early 2000s, a relatively stable period during the mid-2000s and early 2010s, and a gradual decrease in recent years, reaching the lowest levels at the end of the series.

The Group noted that the inclusion of vessel effects improved model performance and reduced variability in the standardized series. The combined Brazil–Uruguay dataset provides enhanced spatial coverage of the southwestern Atlantic, and the model including vessel effects was recommended as the preferred index.

SCRS/2026/056 developed standardized CPUE indices for swordfish using Chinese Taipei distant-water longline data in the South Atlantic for the period 1981–2024. A delta-lognormal GLM framework was applied, incorporating temporal, spatial, and targeting-related variables, including cluster-based fishing strategy and, in alternative model formulations, hooks between floats (HBF). Separate analyses were conducted for different time periods (1981–2024 and 1994/1995–2024) to account for changes in targeting practices and data availability. The standardized CPUE series showed higher values in the early 1990s, followed by a sharp decline in the late 1990s and subsequent stabilization at lower levels in recent years.

The Group noted that the inclusion of cluster-based targeting variables improved the representation of changes in fishing practices over time. The index was considered consistent with previous analyses and suitable for use in the stock assessment.

SCRS/2026/043 presented a collaborative multi-fleet CPUE standardization for South Atlantic swordfish using operational set-level data from Brazil, Chinese Taipei, EU–Portugal, EU–Spain, Namibia, South Africa, and Uruguay, covering the period 1978–2024. The analysis combined data from multiple longline fleets and evaluated both fleet-specific and joint clustering approaches to account for differences in targeting practices among CPCs. Standardized abundance indices were estimated using both GLM and delta approaches, including year, month, latitude, longitude, fleet, cluster, and fleet-cluster interaction terms. Two time periods were considered, 1978–2024 and 1994–2024, to account for known changes in fleet structure and targeting practices in some CPC datasets. The combined index showed higher catch rates in the mid-1990s followed by a general decline thereafter. For the period after 1994, the standardized trends were relatively stable across fleets, with a slight increase in recent years. Results were broadly similar across clustering strategies and temporal subsets, indicating that the standardized trends were not highly sensitive to these modelling choices.

The Group noted that this work represents an important collaborative effort among CPCs to develop a more spatially comprehensive abundance index for South Atlantic swordfish. The Group also noted that the delta approach using fleet-specific clustering and data from 1994-2024 explained more deviance and was recommended as the preferred formulation for the joint longline CPUE standardization.

The Group recommended that data inputs for blue and shortfin mako shark from Spain be re-examined.

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

5.1 Mediterranean stock

The Group decided that the Bayesian Surplus Production model JABBA will be applied as primary model for advice. Total catch inputs will include reported landings and estimated dead discards that will be available as of 10 April 2026. Dead discard estimates will be provided by the ICCAT Secretariat following the methodology applied in the 2020 assessment (Ortiz, 2020), except for the Spanish longline fleet, for which updated estimates are available (SCRS/2026/046).

The base case model's production function will be Pella–Tomlinson. The shape parameter will be externally estimated using Age Structured Estimation Model (ASEM) simulations (Winker *et al*., 2020). For this estimation, an updated prior derived from recent maturity information (SCRS/2026/055), which estimates L_{50} at 136.5 cm, will be used. A complete list of biological parameters for the reference case is provided in **Table 6**.

Catch uncertainty will be incorporated by applying a coefficient of variation (CV) of 10 percent as a random error, along with a sensitivity run excluding catch uncertainty.

The base configuration for abundance indices will include the available standardized CPUE series listed below, while alternative index treatments will be explored through sensitivity analyses.

The Group agreed to use the following CPUE index series:

- Greece longline: 1987–2024
- Ligurian longline: 2010–2023
- Spain longline in weight: 1988–2024
- Morocco longline: 2012–2024.

Coefficients of variation (CV) for CPUE series will follow the results of the standardization process, with a minimum value of 0.25 applied while preserving interannual variability. This will be implemented by adding a positive constant value to the CVs of each CPUE series such that the minimum CV equals 0.25.

Sensitivity analyses will include:

- A run with no random variation on the catch data.
- Incorporating historical CPUE series from Sicilian (Tserpes *et al*., 2011) and/or Ligurian fisheries (Garibaldi and Tserpes, 2015).

Additionally, other sensitivity analyses may also include:

- Removing discards estimation from catch data.
- Assuming alternative scenarios of early catches underreporting (Anon., 2020).
- Assuming alternative specifications to the initial depletion (psi) relative to the 2020 assessment.
- Other configurations that the modelers deem appropriate during the model development process.

Two continuity runs using the strict 2020 assessment configurations with updated catch data and indices for years 2019-2024. They include a Schaefer model and a Pella-Tomlinson model with the shape parameter and r prior as specified in the 2020 assessment report (Anon., 2020).

Standard model diagnostics will be applied following Carvalho *et al.* (2021).

A4a Statistical Catch-at-age

The assessment for all (a4a) statistical catch-at-age model will be used, following the framework applied in the 2020 assessment. The main life-history parameters that will be used are depicted in **Table 6.** For tuning the a4a model runs (base scenario), the Group agreed to apply the four individual indices that were updated in the current meeting:

- Greece longline: 1987–2024
- Italian (Ligurian) longline: 2010–2023
- Moroccan longline: 2012–2024
- Spanish longline: 1988–2024

Alternative runs will explore the potential of including additional historical CPUE indices from the Sicilian (Tserpes *et al*., 2011) and Ligurian fisheries (Garibaldi and Tserpes, 2015).

Catch inputs will encompass total removals from Task1NC. An additional scenario will incorporate discard estimates provided by the ICCAT Secretariat, consistent with the 2020 assessment (Anon. 2020). Updated length-composition data (LJFL), will be compiled by the ICCAT Secretariat according to the approach followed in the previous assessment (Ortiz and Palma, 2020), and will be later converted to catch-at-age according to the adopted growth parameters.

Stock Synthesis (SS)

The Group proposed to explore Stock Synthesis (SS) models on the Mediterranean stock. Consequently, the modelling team will attempt to conduct an exploratory modelling exercise using the SS platform. Its configuration will be aligned as closely as possible with the JABBA and a4a models to ensure comparability. The fleet structure will be defined based on the availability of abundance indices, and homogeneity of the length-composition data. The suggested fleet structure is in **Table 7**. Additional aggregation of fleets 6 through 9 is also envisioned.

5.2 South Atlantic stock

Surplus Production Model

The Bayesian Surplus Production model JABBA will be used, following the approach applied in the 2022 assessment (Parker *et al*., 2022). JABBA is formally included in the ICCAT stock assessment software catalogue and has been widely adopted in recent assessments. Management advice for the 2022 Swordfish Stock Assessment (Anon., 2022) was derived from JABBA model results, highlighting its relevance and robustness as an assessment platform.

The production function will be specified as Pella Tomlinson. Biological information will be incorporated through *r* priors (**Table 5**), derived under alternative formulations based on a continuity run from the 2022 Swordfish Stock Assessment (Anon., 2022), as well as updated Gompertz (Quelle *et al*., 2026) and Bayesian von Bertalanffy approaches (SCRS/P/2026/021). Steepness values of 0.7 and 0.8 will be explored. The *r* priors will be objectively derived using ASEM (see Winker *et al*., 2020), based on available growth information for South Atlantic swordfish and other biological parameters. This approach ensures consistency with the parameterizations considered in the SS model, while incorporating uncertainty in key life history parameters. Uncertainty in natural mortality will be accounted for by assuming a mean value of 0.2 with a coefficient of variation of 30 percent. Based on these assumptions, the Group agreed to implement an uncertainty grid combining the alternative formulations and steepness values, as described in **Table 8**.

Catch inputs will consist of total removals from Task 1NC, including landings and reported dead discards. Additional discard estimates derived from SS, similar to the approach applied for the northern stock, will be incorporated in sensitivity analyses. Catch uncertainty will be explored by applying a coefficient of variation of 10 percent, in addition to a scenario without catch uncertainty.

The base scenario for abundance indices will use the joint longline CPUE series and EU-Spain longline with Japan longline and early Chinese Taipei longline, while sensitivity analyses will explore the use of individual CPUE indices.

Base scenario:

- Joint longline: 1994–2024
- EU-Spain longline in weight: 1989–2024
- Japan longline: 1962–1975, 1976–1990, 1991–2024
- Chinese Taipei longline: 1968–1990

Sensitivity analyses:

- EU-Spain longline in weight: 1989–2024
- Japan longline: 1962–1975, 1976–1990, 1991–2024
- Chinese Taipei longline: 1968–1990, 1998–2024
- Brazil–Uruguay longline with vessel effect: 1994–2024
- South Africa longline: 2004–2024

Coefficients of variation (CV) for CPUE series will follow the results from the standardization process, with a minimum value of 0.25 applied while preserving interannual variability (i.e. in each CPUE series, add a positive constant value on the CV to make the minimum CV of the series 0.25).

Age Structured Model

SS will be used as the age-structured assessment model, following the framework applied in the 2022 assessment (Mourato *et al*., 2022).

The main life-history parameters that will be used are depicted in **Table 9**. For the SS model, the Group will explore a grid of alternative scenarios combining two growth curve hypotheses (Quelle *et al*., 2026, SCRS/P/2026/021) and two steepness values (**Table 9**). The growth curve hypotheses include the Gompertz and Bayes von Bertalanffy growth models (VBGM), while steepness will be fixed at 0.7 and 0.8. This grid will be used to evaluate uncertainty associated with alternative assumptions on growth and stock recruitment dynamics, and to assess the sensitivity of model results to these key biological parameters.

The Group agreed to apply individual indices in the SS for the South Atlantic stock:

- EU-Spain longline in weight: 1989–2024
- Japan longline: 1962–1975, 1976–1990, 1991–2024
- Chinese Taipei longline: 1968–1990, 1998–2024
- Brazil–Uruguay longline with vessel effect: 1994–2024
- South Africa longline: 2004–2024

Based on the available data and the structure adopted for the current assessment, the SS model will be parameterized using a reduced set of fleets representing the main longline fisheries operating in the South Atlantic (**Table 10**).

Catch inputs will include total removals from Task1NC. Discards will be explicitly modelled by fleet, including discard mortality rates, following the approach used in the 2022 Swordfish Stock Assessment (Anon., 2022).

Length-composition data (LJFL) will be compiled by the ICCAT Secretariat and assigned to the corresponding fleets and time periods. These data will be modelled assuming a multinomial distribution with 5 cm length bins. Effective sample sizes will be defined as the natural logarithm of the number of observations to reduce the influence of large sample sizes and avoid overweighting length data in the likelihood.

Model diagnostics will be assessed using the Carvalho *et al.* (2021) flow chart, using the R packages *ss3diags* and *r4ss*, and included the following steps:

1) checking that the hessian matrix is positive definite;
2) a residual analysis of CPUE and length composition fits;
3) a retrospective analysis with eight-year retrospective peels;
4) a model's prediction skill evaluation by applying a hindcasting cross-validation technique:
5) a likelihood profile evaluation of critical parameters (steepness, R_0, and M).

5.3 Plan for intersessional work on assessment models

See section 8.

6. Review of discard estimation plans

SCRS/P/2026/027 described a proposed process and evaluation criteria for discard estimation methods. Within the proposal, CPCs submit methods to the relevant Species Group which then evaluates the method using criteria approved by the Working Group on Stock Assessment Methods (WGSAM). Once approved by the Species Group, the CPC submits revised statistical forms for final consideration from the SC-STATS. Evaluation criteria follow a similar format used for assessing CPUE indices.

The Group noted the burden being placed on WGSAM for evaluating all discard estimation plans and supported this revised process but noted that further consultation was needed with WGSAM and SC-STATS. The Group discussed a procedure to evaluate discard estimation methodologies, based on what is currently done with the CPUEs evaluation tables. The author noted that this plan is preliminary and invited participants in the Group to support development of a more detailed plan for review at WGSAM in May 2026. It was also noted that additional work was needed on the method evaluation table and that it should be evaluated against a variety of existing estimation methods.

The Group asked if presenting this paper with the discard evaluation criteria would replace the need for individual CPCs to present their own papers with the discard estimation methods. It was noted that, in the future, once an evaluation criteria table is developed and approved by WGSAM, it could be used by the Species Groups to evaluate the discard reporting methods for each CPC, eliminating the need for WGSAM to review each individual paper on discard estimation. However, the actual process to be conducted this year (i.e., 2026), whether CPCs still need to submit their estimation methods to the WGSAM, as requested in 2025 by the SCRS, was not clarified. The SCRS Chair concluded that all papers (both old and new submissions) on discard estimation methodology should be reviewed by WGSAM.

The Group noted that it would be useful to review which CPCs are not reporting discards at all, as currently only a small number are doing so. In addition, it would be good to produce a table describing which CPCs are reporting discards and the methods used. It was clarified that information on dead discards is available in Task1NC and the tables are produced. However, the Group emphasized that this work and evaluation relate to more than simply describing if and what CPCs are reporting discards, but to the actual methods being used. It is very important to specify the methods used to estimate discards (model or ratio based, data sources, coverage, etc.) and also if what is being reported are observations (observer records) or the values raised to total effort.

7. MSE matters

SCRS/P/2026/028 described the workplan for North Atlantic swordfish MSE in 2026. Following adoption of an MP in 2024, the SCRS was tasked with development of robustness tests for climate change and minimum size limits. The Swordfish Species Group will develop these tests in 2026 and will update the combined index of abundance to support exceptional circumstances evaluation.

The Group acknowledged this workplan and had no suggested revisions for the plan.

8. Recommendations and workplan

8.1 Recommendations

The Group developed the following recommendations:

To CPCs

The Group recommended that data updates provided by Mexico and the Republic of Guinea be submitted to the ICCAT Secretariat using the appropriate statistical forms for final review from the Swordfish Species Group and the SC-STATS.

The Group noted the significant gaps in swordfish discard reporting and recommends that CPCs apply discard estimation procedures (e.g. BYET) and present their methods and results to the Species Group for review.

The Group recommended that CPCs further work on trapline gear studies using a variety of configurations, seasons, fleets, locations, etc. noting that the SCRS will need to report its findings to the Commission in 2028. Studies should consider catch rates, selectivity, bycatch, and socio-economic factors.

To the ICCAT Secretariat

The Group recommended that work on revisions of the statistical areas in the Mediterranean continue with further input from relevant Species Groups and the SC-STATS.

The Group recommended that the ICCAT Secretariat update discard estimation analyses for Mediterranean fleets in advance of the 2026 Swordfish Stock Assessment (13-17 July 2026). This analysis should follow the same or similar methods as used for the previous 2020 Mediterranean Swordfish Stock Assessment (Anon. 2020), noting that estimations for the Spanish fleets are not required (Ortiz, 2020). This work should be completed by 10 April 2026.

The Group recommended that the ICCAT Secretariat prepare updated swordfish catch-at-size data from 2019 to 2024 for the Mediterranean following the approach used in the previous assessment (Ortiz and Palma, 2020) by 15 May 2026.

To the Working Group on Stock Assessment Methods

The Group recommended that the WGSAM develop standard discard estimation evaluation criteria and that it considers a process for reviewing and approving these methods.

The Group recommends that the WGSAM review the a4a software and consider its inclusion in ICCAT's software catalogue.

To the Swordfish Species Group

The Group recommended that SWOYP and other national scientists develop collaborative studies to further develop swordfish ageing and growth analyses.

The Group recommended updating the Western Mediterranean swordfish spawning habitat indices presented in SCRS/2026/045 to include recent years and incorporating them into the Mediterranean Observatory and into the Ecosystem Report Card, to better monitor climate driven changes in habitat suitability, spatial extent, and phenology.

The Group recommended exploring the feasibility of developing a swordfish larval index as a climate-informed, fisheries-independent indicator to support future stock assessment models for the Mediterranean population.

8.2 Workplan

The Group discussed the major work items to be undertaken by the Swordfish Species Group in 2026.

Assessment model development

The assessment modelling teams formed during this meeting will proceed with model development using the parameters and data inputs agreed in this meeting and described in Section 5 of this report. It was noted that the teams should be given some flexibility to develop alternative modelling scenarios as informed by model diagnostics. The Group agreed that no further data revisions would be accepted apart from those associated with the discard estimation analysis for the Mediterranean, and revisions to the South Atlantic combined index of abundance that may result from data input checks for EU-Spain.

The modelling teams will meet informally to progress the work and if necessary, will consider holding an intersessional information session open to the broader group for feedback on model results in advance of the 2026 Swordfish Stock Assessment Meeting.

Trapline studies

The SCRS is scheduled to provide the Commission with analysis and advice on trapline gear in 2028. CPC scientists will continue their gear trials in 2026 and should be keeping in close contact to coordinate study methods.

Discard estimation

CPC scientists will continue their development and application of discard estimation methods. A sub-group of the Swordfish Species Group will present a proposal to the WGSAM on how these methods should be evaluated and adopted.

Management Strategy Evaluation

The North Atlantic Swordfish MSE will continue to work on robustness test related to climate change and minimum size limits. A technical team will be undertaking this work in collaboration with a technical contractor. The combined index of abundance will undergo a strict update with an additional data year and will be used to support the evaluation of exceptional circumstances.

Biological Studies

The Swordfish Year Programme will continue its studies on ageing and growth, reproduction, stock boundaries, and mixing.

9. Other matters

The ICCAT Secretariat provided the Group with an update on the use of science project funds between 2021-2025. It was noted that in most years the Group has made almost full use of available funds, 2024 being an exception. The underage in 2024 was the result of several years in a row of contract extensions followed by difficulties within a single calendar year to use multiple years of project funding. Project funds must now be used within a single calendar year, without carry forward. In 2025, 96% of funds were used and in 2026 the Swordfish Species Group was on track to fully use approved funds as contracts for most projects were signed or in the final stages of negotiation.

10. Adoption of the report and closure

The Group adopted the report and adjourned the meeting.

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