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Shark Pacific SC22 Position Statement

WCPFC-SC22-2026-OP02

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Submitted by Shark Pacific



POSITION STATEMENT

22nd Regular Session of the
Scientific Committee of the Western
Central Pacific Fisheries Commission

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Sharks Pacific wishes to express its appreciation to the Scientific Committee (SC) of the Western and Central Pacific Fisheries Commission (WCPFC) for the opportunity to participate in the 22nd Regular Session (SC22). We are grateful for the chance to once again engage with the SC and contribute to its vital role in the sustainable management of fisheries within the Western and Central Pacific Ocean (WCPO).

The positions that follow reflect key priorities for Sharks Pacific, which we believe warrant particular scientific attention at this session.

OBSERVER COVERAGE

Aligned with other NGO observer organisations, Sharks Pacific continues to believe that robust observer coverage, by human or electronic means, remains a key priority for fisheries conservation and management of all species in the WCPO, but particularly for vulnerable endangered, threatened, and protected species.¹ We welcome the introduction of the best available science from The Nature Conservancy (TNC) and University of Tasmania (UTAS) at this meeting, which reaffirms that data collected by observers remains critically important to ensure that scientists and managers possess the information they need to make appropriate decisions for everything from stock assessments to non-target species impacts^[2,3,4]. We again reiterate that observers play an indispensable role in monitoring and documenting compliance with key Conservation and Management Measures (CMMs) in the WCPO^[3,5]. Furthermore, we again note that recent research has also demonstrated strong social and economic support for robust observer coverage^[6]. Therefore, the WCPFC must consider securing increased observer coverage levels as a top priority, and member states must make a concerted effort to achieve that coverage.

Over 19 years ago, the WCPFC established CMM 2007-01, which specified that coverage is to be 5% of effort in each non-purse seine fishery under the jurisdiction of the Commission and shall be achieved no later than 30 June 2012^[7], noting that the longline fishery represents the highest risk gear type in terms of both economic and ecological impact. Some members and observers have repeatedly called for action to meet the commitment imposed by CMM 2007-01, while also acknowledging that the 5% coverage level for non-purse seine fisheries was only considered a starting point for a stepwise progression to more appropriate coverage, which is further confirmed by the recent TNC and UTAS research as being $\geq 20\%$ ^[8]. Despite these calls and justification for improving observer coverage based on the best science, several members continue to fail to meet appropriate coverage levels^[9].

Additionally, the WCPFC continues to allow four different methodologies (days at sea, days fished, number of trips, and number of hooks) to calculate observer coverage rates, which does not reflect best practice and complicates effective analyses by creating analytical complexity. The best scientific information available suggests that “number of hooks” represents the best method for achieving multiple objectives, including effectively calculating effort and accurately assessing relatively rare bycatch events^[10,11,12].

Furthermore, we again emphasise the best available scientific evidence from TNC/UTAS that reinforces previous scientific conclusions that even a consistently applied level of 5% coverage is statistically and functionally ineffective to achieve most management ^[13,14,15] or compliance objectives ^[16,17,18]. Low observer coverage also leads to bias, uncertainty, and, ultimately, management failures ^[19]. Specifically, we concur strongly with the conclusions of the TNC/UTAS paper that anything short of 100% coverage unnecessarily introduces a significant level of bias. Poor data quality and quantity resulting from inadequate observer coverage represents the single largest obstacle to establishing appropriate and effective conservation and management measures ^[20].

The WCPFC must take action to meet its obligations and implement scientifically valid and consistent observer coverage levels across all longline vessels operating in the WCPFC Convention Area.

Therefore, Sharks Pacific supports and urges the SC to:

- **Reaffirm calculation of observer coverage on the basis of “number of hooks” as best practice;**
- **Recommend a staged transition for all fleets to calculate observer coverage based on “number of hooks”; and**
- **Endorse a plan to increase observer coverage, by human observers or electronic monitoring, across all longline vessels operating in the WCPFC Convention Area on an annual basis to achieve 100% coverage as soon as possible.**

TRANSSHIPMENT

Sharks Pacific seeks to highlight high seas transshipment as a critical, and currently underappreciated, scientific issue. The SC bears primary responsibility for ensuring the Commission's management advice rests on complete and reliable catch, effort, and bycatch data ^[21]. To the extent that high seas transshipment allows fish to evade that data pipeline, so too does the SC's ability to advise credibly on stock status, including and especially for elasmobranchs. High seas transshipment is conducted overwhelmingly by the longline fleet that remains subject only to the Commission's inadequate 5% minimum observer coverage requirement for longline vessels generally. This represents a fundamental scientific blind spot that the SC should continue to flag to the Commission.

CMM 2009-06 nominally requires 100% Regional Observer Programme (ROP) coverage of most categories of at-sea transshipment ^[22]. In practice, however, observer organisations have raised questions regarding the independence of some ROP observers and very few observer reports of transshipment events have been received by the Commission, leaving the WCPFC Secretariat unable to independently and confidently verify member compliance or the species and volumes actually transshipped ^[23]. The Commission's most recent Annual Report on Transshipment Reporting confirms that while the overall number of high seas transshipment events has declined, the species composition of transshipped catch, including elasmobranchs, remains poorly quantified, constrained by the same reporting and verification gaps that have persisted for over a decade ^[24]. The result is that a substantial proportion of longline-caught product, including elasmobranchs, moves through the supply chain via a pathway with markedly weaker scientific oversight than in-port landings or transshipment.

This gap compounds the data deficiencies also highlighted with respect to non-tuna species reporting in aggregate catch and effort data. Just as unraised BEST estimates understate elasmobranch mortality by relying on whatever fraction of the fleet reports operational catch and effort data, unverified high seas transshipment removes an additional, and currently unquantified,

volume of elasmobranch catch and product from independent scientific scrutiny at the point it changes vessel. Sharks Pacific is not aware of any current mechanism to estimate the species composition of high seas transshipped catch, despite this now representing a persistent and material gap in the scientific baseline used to assess elasmobranch stock status in the WCPO.

This gap in the scientific baseline persists at a time when it can least be afforded. At its 20th Conference of the Parties in Samarkand (November-December 2025), CITES adopted new international trade protections for more than 70 shark and ray species, including Appendix I listings for the oceanic whitetip shark, whale shark, and manta and devil rays ^[25,26]. Several of these listings cover species and species complexes routinely encountered in WCPO longline fisheries, and place a premium on robust, verifiable scientific catch and trade data to support forthcoming CITES non-detriment finding processes and to demonstrate that WCPO-sourced product entering international trade is legally and sustainably taken. A transshipment pathway that the Commission cannot verify at the species level directly undermines CCMS' ability to meet these emerging international obligations and undermines the credibility of any assurances the Commission or its members might offer regarding the sustainability of elasmobranch products moving through WCPO high seas transshipment.

Therefore, Sharks Pacific supports and urges the SC to:

- **Formally note to the Commission the lack of independent observer coverage on the longline fleet engaged in transshipment, and its implications for the reliability of elasmobranch data used in stock assessments;**
- **Recommend that the Secretariat, in consultation with the SSP, develop and report a species-level, or at minimum elasmobranch-disaggregated, estimate of catch and product moved via high seas transshipment, drawing on available observer, VMS, and Transshipment Electronic Reporting (TSER) data;**
- **Recommend that observer coverage of high seas transshipment be brought into practical alignment with the 100% coverage already required under CMM 2009-06, including through electronic monitoring and human observer deployment on both the delivering and receiving vessel; and**
- **Advise the Commission that improved scientific baselines for all elasmobranch species, inclusive of transshipment-related data gaps, are now a matter of increased urgency considering recent CITES Appendix I and II listings affecting WCPO-caught shark and ray species.**

SHARKS AND RAYS

As key predators and vital indicators of ecosystem health, elasmobranchs are fundamental to maintaining the balance of marine ecosystems globally and across the Western and Central Pacific Ocean (WCPO) ^[27,28,29]. However, elasmobranchs continue to represent a disproportionately large component of annual bycatch in regional fisheries ^[30]. This persistent fishing impact has resulted in unsustainable mortality rates for many elasmobranchs, as evidenced by current stock assessment trends that paint a concerning picture for the future of many species ^[31,32]. While Sharks Pacific acknowledges the WCPFC's recent positive steps to prohibit shark lines and wire trace, along with guidelines promoting safe handling procedures and the use of line cutters to minimize trailing gear, we remain deeply concerned about the inadequate conservation and management of elasmobranchs throughout the WCPO region.

Like other observer organisations, Sharks Pacific remains particularly troubled by the systemic failures in data collection that continue to undermine overall effective fisheries conservation and management, but especially elasmobranch conservation efforts. The persistent lack of standardized bycatch definitions, combined with inconsistent retention policies, creates significant barriers to understanding the true scope of elasmobranch mortality across the WCPO. Similar to other RFMOs, the WCPFC maintains substantially incomplete records of bycatch discards, largely due to these definitional inconsistencies ^[33].

Scientific Data Gaps

While we recognize the efforts of the Scientific Services Provider (SSP) and Data Collection Committee (DCC) to address data gaps, we emphasise that substantial improvements in minimum data reporting requirements remain urgently needed. The current submission protocols for operational catch and effort data, as well as bycatch estimates in longline fisheries, fall far short of what is necessary to protect relatively low interaction species including sea turtles and vulnerable elasmobranch species ^[34]. Enhanced operational catch and effort data would improve our ability to accurately estimate bycatch for elasmobranchs by providing more granular data on operational aspects, such as hooks between floats.

Sharks Pacific is particularly concerned by several aspects of the quality and quantity of data available to address non-tuna species, particularly with respect to logbook operational data coverage by field, gear, fleet and year described in WCPFC-SC22-2026-ST-IP02. The diagnostics offered in this paper matter for the credibility of shark data that underpins stock assessments and management actions.

First, sharks are effectively only visible through the “KEY SPECIES” field, and that field is a moving target. Silky shark is the sole elasmobranch in the purse seine key species list while blue shark is the sole elasmobranch in the longline key species list ^[35]. Since 2025, inclusion in “key species” is contingent on a species appearing in $\geq 10\%$ of sets since 2018, which operates as a simple threshold. Additionally, coverage statistics for silky/blue shark are bundled into a single aggregate percentage with the target tunas (Figures 8 and 17), so, because there is no standalone shark-specific coverage metric in this paper, a CCM's “key species” coverage could look fine on paper while shark reporting specifically is poor. Furthermore, the 10%-of-sets threshold could, in principle, cause a shark species to drop out of “key species” reporting requirements entirely in a low-encounter year/fleet, with no flag raised in this framework.

Additionally, longline gear-configuration fields remain significantly under-reported. Hooks between floats, branchline length, distance between floats, and floatline length show extensive 0% cells across most CCMs from roughly 2010 onward. These fields directly affect elasmobranch catchability because shallow vs. deep-set configurations matter for pelagic shark CPUE ^[36]. Thus, they are needed to properly standardise elasmobranch CPUE indices, especially for the Sphyrna and silky shark work feeding into assessments. Furthermore, without sufficient and consistent gear-configuration reporting, elasmobranch CPUE standardization is working with an incomplete covariate set, and confidence intervals on trend estimates will be wider than they should be.

Therefore, Sharks Pacific supports and urges the SC to:

- **Mandate the timely submission of current and historic operational data by all members;**
- **Recommend the addition of a disaggregated coverage metric specifically for CMM-listed shark and ray species (not bundled into the tuna-driven “key species” ratio), so declining shark-specific reporting doesn't hide behind healthy tuna coverage numbers; and**

- **Recommend improvements in the gear-configuration data gap (hooks between floats, branchline/floatline length), which results in a direct constraint on elasmobranch CPUE standardization work.**

Commission Scientific Data and Data Products

Sharks Pacific is increasingly concerned that non-tuna species, such as elasmobranchs, are not raised to account for reporting coverage gaps in the BEST (aggregate catch and effort) data³⁷. Because only key tuna catches are raised via the coverage-ratio method, non-tuna species are left as raw, unraised aggregate values. While improving aggregate data for non-tunas is identified as a future priority, it is not current practice and leads to significantly unreliable estimates used in a variety of analyses.

As a result, published/aggregate shark catch figures in WCPFC data products essentially amount to floor estimates bounded by whatever fraction of the fleet reported, with no correction applied, which is unlike tuna that is adjusted toward a “true” total via annual catch estimates (ACE)-based raising. Given the low longline observer/logbook coverage, shark mortality figures drawn from BEST data are likely to substantially understate true catch levels, particularly for low-coverage fleets. This substantial underestimate is directly relevant to any elasmobranch stock status conclusions drawn from BEST-derived inputs, which ultimately inform management advice.

Therefore, Sharks Pacific supports and urges the SC to:

- **Recommend that, absent recommended necessary improvements in observer coverage, non-tuna (shark) catch data should be brought into a correction framework analogous to tuna ACE-raising; and**
- **Recommend whether a Project 60-style species composition correction is feasible for key shark bycatch species, building on the existing observer-data infrastructure.**

ENSURING EVIDENCE-BASED SHARK MORTALITY ESTIMATES

Sharks Pacific wishes to again highlight the general challenge of unreliable catch data due to poor reporting, inadequate observer coverage and other contributing factors. For example, weak policy elements contained in the current CMM 2024-05 aimed at addressing shark finning contribute to unrepresentative shark mortality estimates by obscuring species and number of sharks caught. Alternative measures that allow binding fins to a carcass, or corresponding numbered tags on fins and carcasses, effectively prevent adequate catch accounting. Further, these provision present opportunities to high-grade fins or obscure landings of prohibited species. Moreover, proponents of the alternative measures have failed to bring forward substantive evidence that show these measures facilitate shark mortality estimates comparable to a fins naturally attached (FNA) policy. Best practice and evidence show that a FNA policy represents the best solution to ensure both meaningful compliance with shark retention measures and, ultimately, accurate catch accounting^[38,39]. By ensuring that sharks are landed with their fins attached, it allows for better monitoring of species-specific catch rates, contributes to better science, and, thus, results in better overall management of elasmobranchs.

Lastly, as indicated in the IATTC 2nd Circle Hook Workshop (April 29-May 1, 2025), there is a growing body of evidence indicating that circle or “C” hooks perform better than equivalent standard “J” hooks at reducing mortality of vulnerable bycatch species, which, on balance, offer an overall conservation benefit based on the best science^[40]. Specifically, the use of large “C” hooks results in a reduction in sea turtle mortality, particularly of highly endangered leatherback turtles^[41-47].

Additionally, several studies indicate mortality reduction across other ETP species, including elasmobranchs, due to hook design. Elasmobranchs get hooked more frequently in the jaw (externally) with “C” hooks, rather than the gills or guts (internally), which reduces post-release mortality^[48-51].

Therefore, Sharks Pacific supports and urges the SC to:

- **Reaffirm that FNA represents best practice to ensure appropriate elasmobranch data collection and science and, thus, conservation and management; and**
- **Recommend further research and coordination with IATTC to consider transitioning to circle or “C” hooks as best practice mitigation to increase post-release survivorship for elasmobranchs and other non-target species.**

SCIENTIFIC PROCESS AND PROCEDURES

Sharks Pacific welcomes the submission of WCPFC-SC22-2026-GN-WP05 and WCPFC-SC22-2026-GN-WP06 as a meaningful step toward rationalising the SC's workload in a structured and transparent manner. We offer conditional support for the proposed three-year prioritisation process, while registering concerns about the enforceability of its key commitments and calling for complementary action through the Finance and Administration Committee (FAC) to ensure that the procedural architecture proposed is matched by the resources necessary to implement it.

Conditional Support for the Proposed Framework

Sharks Pacific acknowledges that the SC's workload has grown substantially and that a scheduling-based approach to prioritisation is a pragmatic and defensible response to that challenge. We are broadly supportive of the proposal to move from a two-year to a four-year review cycle for EB theme CMMs. The experience of the seabird CMM review under the previous two-year alternating schedule demonstrated that a single year is insufficient to conduct a rigorous, multi-stakeholder CMM review, and that extending the cycle to two consecutive years per species group is a reasonable structural response to that constraint.

We also support the principle advanced in WP06 and referenced in WP05 that tuna stock assessment frequency may be amenable to reduction through the introduction of benchmark and update assessment cycles analogous to those applied in other RFMO contexts, and that resources freed through such reductions should be directed, at least in part, toward improving the frequency and depth of assessments for data-poor non-target species including sharks, rays, and billfish. The SC small group proposed at SC22 should treat this reallocation opportunity as an explicit objective, not merely an incidental benefit of tuna scheduling reform.

Concerns Regarding Enforceability and Procedural Manipulation

Sharks Pacific's support is conditional on the recognition that, as currently drafted, WP05 establishes a framework of *guidance* rather than *obligation*. The three-year schedule, the EB theme cycle adjustment, and the recommendation that theme conveners conduct ongoing prioritisation within their respective agendas all rely on discretionary consensus to produce timely action. In the WCPFC's experience, this creates conditions in which procedurally motivated deferrals, particularly for non-target species work, can be compounded across successive sessions, resulting in obligations that shift from a two-year to a four-year to a longer horizon without any formal decision by the Commission to that effect.

This concern is most acute with respect to the review of CMM 2025-06 on sharks, which the Commission mandated for SC23 (2027). The paper acknowledges that this review may need to be rescheduled and recommends that SC22 "provide advice on the timing." In the absence of a hard cap on the permissible deferral period, and without a requirement that any deferral beyond one session be approved by the Commission rather than managed at the SC level, there is a material risk that the 2027 review date slips to 2028, and subsequently to the post-SC24 prioritisation horizon and beyond. For a CMM whose effectiveness is directly tied to the conservation status of multiple CITES-listed species, including oceanic whitetip shark, this is not an acceptable risk.

Therefore, Sharks Pacific supports and urges the SC to:

- **Strengthen the proposed framework by requiring that any deferral of a Commission-mandated CMM review beyond one SC session be treated as a Commission-level decision rather than an internal scheduling matter;**
- **Establish a mandatory EB theme floor such that elasmobranchs appear on the agenda no less frequently than once every two sessions regardless of the broader cycle; and**
- **Anchor all scheduling decisions under the prioritisation process explicitly to the Convention's precautionary and ecosystem approach obligations under Article 5.**

Complementary Funding Through the Finance and Administration Committee

The procedural framework proposed in WP05 and WP06 cannot deliver meaningful outcomes without adequate and sustained resourcing. The proposals for benchmarking and updating tuna assessment cycles, independent reviews of stock assessments, data-poor method development for sharks and billfish, and a dedicated SC24 EB prioritisation exercise all carry real resource implications for both the WCPFC Secretariat and the Commission's Scientific Services Provider (SPC). These implications are not addressed in either paper.

Sharks Pacific notes that FAC19 recommended that project tables and budget papers be revised to show the distribution of research expenditure across broad species categories and to flag projects that leverage significant co-funding or in-kind contributions. This recommendation has not yet been actioned. We call on the SC to formally endorse the FAC19 recommendation and to request that the Secretariat implement it ahead of WCPFC23, so that the Commission can make resourcing decisions with a clear picture of the current distributional imbalance between tuna and non-tuna scientific work.

Therefore, Sharks Pacific supports and urges the SC to:

- **Recommend to the Commission that any prioritisation outcome adopted at or following SC22 be accompanied by a dedicated FAC workstream to assess whether the current budget envelope is adequate to deliver the revised work program within the proposed timelines; and**
- **Endorse that, if the shift to longer assessment cycles for tunas is intended to create capacity for more intensive work on sharks, billfish, and other non-target species, the intent must be reflected explicitly in the Commission's science budget and in the SSP's mandate to ensure that capacity gains from tuna scheduling reform will not be absorbed by existing workload rather than redirected to the species groups that most urgently need it.**

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- ¹ Bridger, S. (2019) Leading Environmental NGOs Stand Together to Call for 100% Observer Coverage on Industrial Tuna Fishing Vessels, retrievable at <https://www.prnewswire.com/news-releases/leading-environmental-ngos-stand-together-to-call-for-100-observer-coverage-on-industrial-tuna-fishing-vessels-300873686.html>.
- ² Brown, Christopher J., *et al.* (2026) *Accurately Estimating Catch: An Illustration of the Effects of Bias in Independent Monitoring of Fisheries*. Submitted by The Nature Conservancy and the University of Tasmania, WCPFC Scientific Committee, Twenty-Second Regular Session, Working Paper WCPFC-SC22-2026-ST-WP09 Rev.01.
- ³ Davies, S. (2003). Guidelines for Developing an at-Sea Fishery Observer Programme. FAO Fisheries Technical Paper 414, ISSN 0429-9345. Food and Agriculture Organization of The United Nations, Rome.
- ⁴ Domingo, A., *et al.* (2025). Sea turtles in the Atlantic and Indian Oceans, a step towards understanding bycatch and management of these species in tuna fisheries. *Biological Conservation*. 302. 10.1016/j.biocon.2025.110966.
- ⁵ Palma, M.A.E. (2010). Promoting Sustainable Fisheries: The International Legal and Policy Framework to Combat Illegal, Unreported and Unregulated Fishing. Volume 6 of Legal Aspects of Sustainable Development, ISBN 9789004175754. Martinus Nijhoff Publishers, p. 142.
- ⁶ Kim, Y., *et al.* (2025). Data-Based Analysis on the Economic Value of Fishery Observer Programs in International Fisheries Management: Insights from Korea's Distant Water Fisheries. *Water*. 17. 133. 10.3390/w17010133.
- ⁷ WCPFC (2007). Conservation and Management Measure for the Regional Observer Programme, at 9, CMM 2007-01 (Dec. 2-7, 2007), <https://www.wcpfc.int/doc/cmm-2007-01/conservation-and-management-measure-regional-observer-programme> [Superseded by CMM 2018-05, which consolidated other observer related issues into a single measure].
- ⁸ *Supra* note 2.
- ⁹ WCPFC (2025), Status of Observer Data Management, WCPFC-SC21-2025/ST-IP-05, at 17-20, Tables 3 and 4.
- ¹⁰ Dietrich, K. *et al.* (2007). Best Practices for the Collection of Longline Data to Facilitate Research and Analysis to Reduce Bycatch of Protected Species, NOAA Technical Memorandum NMFS-OPR-35 March 2007. at 25, March 2007. ("Fishing effort can be derived from information collected on number of hooks deployed or retrieved. The number of hooks deployed was ranked as critical or preferred by 81% of data user[s]...")
- ¹¹ IATTC (2019), Scientific Advisory Committee, SAC-10-04 – Longline observer program reports, at 2 (13-17 May 2019) ("Number of hooks is considered a more accurate measure of longline effort.")
- ¹² IATTC (2019). Scientific Advisory Committee, SAC-10 INF-H - Standardization of Reporting Formats and Effort Reporting for Longline Fisheries (Resolution C-11-08), at 3, (13-17 May 2019) ("...number of hooks is the most precise, and is the standard metric used both by the other tuna RFMOs and by the IATTC for scientific purposes.")
- ¹³ *Supra* note 2.
- ¹⁴ Lawson, T. (2003). Observer coverage rates and the accuracy and reliability of estimates of CPUE for offshore longline fleets targeting South Pacific albacore. Working Paper SWG-4. Sixteenth Meeting of the Standing Committee on Tuna and Billfish, 9–16 July 2003, Mooloolaba, Queensland, Australia.
- ¹⁵ Lawson, T. (2004). Observer coverage rates and reliability of CPUE estimates for offshore longliners in tropical waters of the Western and Central Pacific Ocean. Working Paper SWG-4, Seventeenth Meeting of the Standing Committee on Tuna and Billfish, 9-18 August 2004, Majuro, Republic of Marshall Islands.
- ¹⁶
- ¹⁷ Benoit, H., *et al.* (2009) Can the data from at-sea observer surveys be used to make general inferences about catch composition and discards? *Can. J. Fish. Aquat. Sci.* 66: 2025-2039.
- ¹⁸ Babcock, E., *et al.* (2003). How Much Observer Coverage is Enough to Adequately Estimate Bycatch? Pew Institute for Ocean Science, Miami, FL, and Oceana. Washington.
- ¹⁹ Gilman, E. *et al.* (2018). Meeting the objectives of fisheries observer programs through electronic monitoring. 10.13140/RG.2.2.28000.99846.
- ²⁰ WCPFC (2025), Summary of bycatch in WCPFC longline fisheries at a regional scale, 2003–2023. WCPFC-SC21-2025/ST-WP-09, ([recommendation to] note the difficulties in robust estimation of longline catches from observer data, particularly for rarely caught species, given the low levels and imbalanced nature of observer coverage.) (July 21, 2025).
- ²¹ *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean*. 5 Sept. 2000, Western and Central Pacific Fisheries Commission. <https://www.wcpfc.int/sites/default/files/2025-08/text.pdf>. Section 2, Article 12, Paragraphs 1–2.

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- ²² WCPFC (2009). Conservation and Management Measure on Regulation of Transshipment, CMM 2009-06, Paragraph 13 (requiring 100% Regional Observer Programme coverage of at-sea transshipment for most vessel categories).
- ²³ Wold, C. and Cook, A. (2019). Observer Reporting of Transshipments in the WCPFC. World Wide Fund for Nature (WWF) (documenting that very few observer reports of high seas transshipment events have reached the WCPFC Secretariat despite the CMM 2009-06 observer requirement, leaving compliance and catch reporting largely unverified).
- ²⁴ WCPFC (2026). Annual Report on WCPFC Transshipment Reporting, WCPFC-TCC22-2026-RP03, Technical and Compliance Committee, Twenty-Second Regular Session, Pohnpei, FSM (Sept. 2026).
- ²⁵ CITES Secretariat (2025). Halfway through the 20th World Wildlife Conference in Samarkand: CITES decisions on trade regulation imminent for big cats, trees, sea cucumbers, sharks & more, *retrievable at* <https://cites.org/eng/news/pr/halfway-through-20th-world-wildlife-conference-cites-cop20-2025> (Dec. 1, 2025).
- ²⁶ Born Free USA (2025). Imperiled Shark and Ray Species Win Unprecedented Protection at the CITES CoP20, *retrievable at* <https://www.bornfreeusa.org/2025/12/01/imperiled-shark-and-ray-species-win-unprecedented-protection-at-the-cites-cop20/> (noting new Appendix I listings for oceanic whitetip sharks, manta and devil rays, and whale sharks, adopted by consensus).
- ²⁷ Su, H. *et al.* (2025). What can we learn from the loss of sharks?. *Trends in Ecology & Evolution*. 40. 10.1016/j.tree.2025.04.012.
- ²⁸ Dedman, S. *et al.* (2024). Ecological roles and importance of sharks in the Anthropocene Ocean. *Science* (New York, N.Y.). 385. adl2362. 10.1126/science.adl2362.
- ²⁹ Ahilan, B. *et al.* (2021). Ecological Importance of Sharks. *Journal of Aquaculture in the Tropics*. 36. 31-38. 10.32381/JAT.2021.36.1-4.4.
- ³⁰ Peatman, T., *et al.* (2023). Estimating trends and magnitudes of bycatch in the tuna fisheries of the Western and Central Pacific Ocean. *Fish and Fisheries*, 24, 812–828. <https://doi.org/10.1111/faf.12771>.
- ³¹ Edgar, G., *et al.* (2024). Stock assessment models overstate sustainability of the world's fisheries. *Science* (New York, N.Y.). 385. 860-865. 10.1126/science.adl6282.
- ³² Pacoureau, N., *et al.* (2021). Half a century of global decline in oceanic sharks and rays. *Nature*. 589. 567-571. 10.1038/s41586-020-03173-9.
- ³³ Gilman, E., *et al.* (2017). Discards by global tuna fisheries. *Marine Ecology Progress Series*. 582. 10.3354/meps12340.
- ³⁴ WCPFC, Coverage Levels for Operational Data Fields Submitted to the WCPFC, WCPFC-SC21-2025/ST-IP-02, Scientific Committee, 21st Regular Session, Western and Central Pacific Fisheries Commission, (August 13, 2025).
- ³⁵ WCPFC, *Coverage Levels for Operational Data Fields Submitted to the WCPFC*. WCPFC-SC22-2026-ST-IP02, Scientific Committee, 22nd Regular Session, Western and Central Pacific Fisheries Commission, p 2, (July 13, 2026).
- ³⁶ Santos, C.C., *et al.* (2024). A review of reported effects of pelagic longline fishing gear configurations on target, bycatch and vulnerable species. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 34(1), e4027. aqc.4027.
- ³⁷ WCPFC, *Commission Scientific Data and Data Products: Definitions, Applications and Nuances*. WCPFC-SC22-2026-ST-IP04, Scientific Committee, 22nd Regular Session, Western and Central Pacific Fisheries Commission, p 6, (July 11, 2026).
- ³⁸ Ziegler, I. (2024). Fins Naturally Attached, the globally acknowledged best practice to prevent finning REV 1 IOTC WPEB 2023.
- ³⁹ Gutteridge, A., *et al.* (2024). How are appropriate performance levels developed for MSC certification? A case study assessing shark finning, *Marine Policy*, Volume 163, 106119, ISSN 0308-597X.
- ⁴⁰ Inter-American Tropical Tuna Commission. (2025) Chair's Report: 2nd Circle Hook Workshop, 28–30 April 2025. IATTC, Apr. 2025. <https://www.iattc.org/en-US/Event/DetailEvent/Event-WSHKS-02>
- ⁴¹ Andraka, S., *et al.* (2013). Circle hooks: developing better fishing practices in the artisanal longline fisheries of the Eastern Pacific Ocean. *Biol Conserv.*; 160:214-24;
- ⁴² Curran, D., *et al.* (2011). Effects of circle hooks on pelagic catches in the Hawaii-based tuna longline fishery. *Fish Res.*; 109:265-75
- ⁴³ Foster D., (2012). Evaluation of hook and bait type on the catch rates in the western North Atlantic Ocean pelagic longline fishery. *Bull Mar Sci*. 2012; 88:529-45
- ⁴⁴ Huang, H., *et al.* (2016). Influence of hook type on catch of commercial and bycatch species in an Atlantic tuna fishery. *Mar Policy.*; 65:68-75
- ⁴⁵ Pacheco J., *et al.* (2011). A comparison of circle hook and J hook performance in a western equatorial Atlantic Ocean pelagic longline fishery. *Fish Res.*; 107:39-45

⁴⁶ Promjinda, S., *et al.* (2008). Efficiency of the circle hook in comparison with J-hook in longline fishery. Consortium for Wildlife Bycatch Reduction. <https://www.bycatch.org/articles/efficiency-circle-hook-comparison-j-hook-longline-fishery>

⁴⁷ Sales G., *et al.* (2010) Circle hook effectiveness for the mitigation of sea turtle bycatch and capture of target species in a Brazilian pelagic longline fishery. *Aquat Conserv Mar Freshw Ecosyst*, 20:428-36.

⁴⁸ Saïdi, B. *et al.* (2020). Are circle hooks effective management measures in the pelagic longline fishery for sharks in the Gulf of Gabès?. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 30. 10.1002/aqc.3315.

⁴⁹ Reinhardt, J. *et al.* (2017). Catch rate and at-vessel mortality of circle hooks versus J-hooks in pelagic longline fisheries: A global meta-analysis. *Fish and Fisheries*. 19. 10.1111/faf.12260.

⁵⁰ Gilman, E. *et al.* (2015). A cross-taxa assessment of pelagic longline by-catch mitigation measures: Conflicts and mutual benefits to elasmobranchs. *Fish and Fisheries*. 17. 10.1111/faf.12143.

⁵¹ Cosandey, G. *et al.* (2012). The Effect of Circle Hooks on Shark Catchability and At-Vessel Mortality Rates in Longlines Fisheries. *Bulletin of Marine Science*. 88. 10.5343/bms.2011.1054.