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## ANNOTATED AGENDA FOR THE 19<sup>TH</sup> WORKING PARTY ON ECOSYSTEMS AND BYCATCH: ASSESSMENT MEETING

**Last updated: August 2023**

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**Date:** 11-15 September 2023

**Location:** La Réunion, France

**Venue:** Hotel le Récif, La Saline-les-Bains

**Time:** 09:00 – 17:00 (Réunion time, GMT+4)

**Chair:** Dr Mariana Tolotti (EU, France)

**Vice-Chairs:** Mr Mohammed Koya (India) and Dr Charlene da Silva (South Africa)

### 1. OPENING OF THE MEETING (Chair)

### 2. ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION (Chair)

- IOTC-2023-WPEB19-01a: Agenda of the 19th Working Party on Ecosystems and Bycatch (Assessment Meeting)
- IOTC-2023-WPEB19-01b: Annotated agenda of the 19th Working Party on Ecosystems and Bycatch (Assessment Meeting)
- IOTC-2023-WPEB19-02: List of documents of the 19th Working Party on Ecosystems and Bycatch (Assessment Meeting)

### 3. THE IOTC PROCESS: OUTCOMES, UPDATES AND PROGRESS

#### 3.1. Outcomes of the 25<sup>th</sup> Session of the Scientific Committee (IOTC Secretariat)

- IOTC-2023-WPEB19-03: Outcomes of the 25<sup>th</sup> Session of the Scientific Committee

#### 3.2. Outcomes of the 27<sup>th</sup> Session of the Commission (IOTC Secretariat)

- IOTC-2023-WPEB19-04: Outcomes of the 27<sup>th</sup> Session of the Commission

#### 3.3. Review of the Conservation and Management Measures relevant to Ecosystems and Bycatch (IOTC Secretariat)

- IOTC-2023-WPEB19-05: Review of the Conservation and Management Measures relevant to Ecosystems and Bycatch

#### 3.4. Progress on the recommendations of WPEB18 (IOTC Secretariat)

- IOTC-2023-WPEB19-06: Progress on the recommendations of WPEB18

### 4. REVIEW OF THE DATA AVAILABLE AT THE SECRETARIAT FOR BYCATCH SPECIES AND BYCATCH DATA ESTIMATION APPROACHES (All)

- IOTC-2023-WPEB19-07\_rev1: Review of the statistical data and fishery trends for ecosystems and bycatch species (IOTC Secretariat)
- IOTC-2023-WPEB19-33: Estimating trends and magnitudes of bycatch in the tuna fisheries of the Western and Central Pacific Ocean (T. Peatman, V. Allain, L. Bell, B. Muller, A. Panizza, N. B. Phillip, G. Pilling and S. Nicol)

### 5. REVIEW OF NATIONAL BYCATCH ISSUES IN IOTC MANAGED FISHERIES AND NATIONAL PLANS OF ACTION (sharks; seabirds; marine turtles) (CPCs and IOTC Secretariat)

5.1. Updated status of development and implementation of NPOA for seabirds and sharks, and the implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations (CPCs)

- IOTC-2023-WPEB19-08\_rev1: Status of development and implementation of NPOA for seabirds and sharks, and the implementation of the FAO guidelines to reduce marine turtle mortality in fishing operations (IOTC Secretariat)
- IOTC-2023-WPEB19-10: Research prioritisation to manage sharks and rays in South African Fisheries (C. da Silva, S. Lamberth and S. Kerwath)

Information paper:

- IOTC-2023-WPEB19-INF38: Global governance guard rails for sharks: Progress towards implementing the United Nations international plan of action (E. Gilman, M. Chaloupka, N. Taylor, L. Nelson, K. Friedman and H. Murua)

5.2. Updated status of national fisheries and bycatch (CPCs)

- IOTC-2023-WPEB19-11: Gillnet tuna fisheries in the Coastal waters of India: Intensity and spatial spread of the fisheries with implications of non-target and sensitive species interactions (M. Koya, A. Azeez, E.M. Abdussamad, P. Rohit and K. Shoba Joe)
- IOTC-2023-WPEB19-12: An overview on large pelagic species and Estimation of By-catch by Iranian fishing vessels (Gillnets) In IOTC competence of area in 2021 (M. D. Siyahaki)
- IOTC-2023-WPEB19-13: Ecosystem and bycatch in Somalia 2023 (M. M. Adawe, S. Abdulahi Nor)
- IOTC-2023-WPEB19-14: Vulnerability assessment of elasmobranch species to fisheries in coastal Kenya: implications for conservation and management policies (B. Kiilu, B. Kaunda-Arara, G. Okemwa, R. Oddenyo, E. Mueni, P. Musembi, B. Fulanda, M. Okeri, L. Menya, G. Nduku, J. Musembei, M. Omar, E. Kimani)
- IOTC-2023-WPEB19-35: Catch composition and some biological aspects of silky sharks (*Carcharhinus falciformis*) landed by surrounding net fishery in Sri Lanka (D. G. Balawardhana, H. L. Herath and S. S. Haputhantri)

**6. REVIEW INFORMATION ON BIOLOGY, ECOLOGY, FISHERIES AND ENVIRONMENTAL DATA RELATING TO SHARKS (Chair)**

6.1. Presentation of new information available on sharks (all)

- IOTC-2023-WPEB19-15: Is the demand for fins driving the high capture of sharks, or are there more significantly valuable commodities? (G. Moreno)
- IOTC-2023-WPEB19-16\_rev1: Fins Naturally Attached the globally acknowledged best practice to prevent Finning (I. Ziegler)
- IOTC-2023-WPEB19-17\_rev1: Undetected silky sharks (*Carcharhinus falciformis*) in the wells of the tropical tuna Spanish purses–seine fleet from the Indian Ocean (A. Perez San Juan, M. L. Ramos Alonso, J. C. Baez and V. Sierra)
- IOTC-2023-WPEB19-18: Post-release mortality of oceanic whitetip sharks caught by purse seiners in the Indian Ocean: POREMO project (P. S. Sabarros, E. V. Romanov, E. Mollier, M. Tolotti, P. Bach)
- IOTC-2023-WPEB19-19: An update on the recent development of IOTC BTH PRM Project and considerations for further actions (E. Romanov)

Information papers:

- IOTC-2023-WPEB19-INF04: Diet composition of silky shark in the Arabian Sea, offshore waters of Pakistan (H. B. Osmany, H. Imran and K. Zohra)

- IOTC-2023-WPEB19-INF05: Spatio-temporal distribution of juvenile oceanic whitetip shark incidental catch in the western Indian Ocean (L. Lopetegui-Eguren, J. J. Poos, H. Arrizabalaga, G. L. Guirhem, H. Murua, N. Lezama-Ochoa, S. P. Griffiths, J. R. Gondra, P. S. Sabarros, J. C. Baez and M. J. Juan-Jorda)
- IOTC-2023-WPEB19-INF06: Identifying the drivers of silky shark distribution and an evaluation of protective measures (S. Murray, J. J. Meeuwig, C. D. H. Thompson and D. Mouillot)
- IOTC-2023-WPEB19-INF07: Biological aspects, exploitation rates, and spawning potential ratio of scalloped hammerhead shark (*Sphyrna lewini* Griffith & Smith, 1834) in Lampung Bay waters, Indonesia (B. Nugraga, A. S. Samusamu, R. Puspasari, D. Oktaviani, R. Rachmawati, P. F. Rachmawati, P. S. Sulaeman, S. T. Hartati and N. N. Wiadnyana)
- IOTC-2023-WPEB19-INF08: Global hotspots of shark interactions with industrial longline fisheries (E. S. Burns, D. Bradley and L. R. Thomas)
- IOTC-2023-WPEB19-INF09: Phylogeny explains capture mortality of sharks and rays in pelagic longline fisheries: a global meta-analytic synthesis (E. Gilman, M. Chaloupka, L. R. Benaka, H. Bowley, M. Fitchett, M. Kaiser and M. Musyl)
- IOTC-2023-WPEB19-INF10: Beyond Post-release Mortality: Inferences on Recovery Periods and Natural Mortality From Electronic Tagging Data for Discarded Lamnid Sharks (H. D. Bowlby, H. P. Benoit, W. Joyce, J. Sulikowski, R. Coelho, A. Domingo, E. Cortes, F. Hazin, D. Macias, G. Biais, C. Santos and B. Anderson)
- IOTC-2023-WPEB19-INF36: Analysis of the Marine Stewardship Council’s policy on shark finning and the opportunity for adoption of a ‘Fins naturally attached’ policy in the MSC fisheries standards review (I. Ziegler, A. Hammond, S. Millward, K. Woodroffe, C. Vail, L. Guida, A. Hofford, R. Arauz)

## 6.2. Development of shark research work plan for scalloped hammerhead shark (all)

Information paper:

- IOTC-2023-WPEB19-INF11: Preliminary recovery plan for scalloped hammerhead in the Indian Ocean (C. Rigby)

## 7. STOCK ASSESSMENT AND INDICATORS FOR SHARKS (Chair)

### 7.1. Review of indicators (all)

- Silky shark
  - Porbeagle shark
  - Other species
- IOTC-2023-WPEB19-20: Historical standardized CPUEs of seven shark species in the Indian Ocean with preliminary catch estimation (E. Gee, E. V. Romanov, D. Curnick, B. Block and F. Ferretti)
  - IOTC-2023-WPEB19-34\_rev1: Silky shark abundance index based on CPUE standardisation of French Indian Ocean tropical tuna purse seine observer bycatch data (D. Kaplan and M. Tolotti)
  - IOTC-2023-WPEB19-21: Developing an Abundance Index of Blue Shark From a Handline Fishery in Southern Java Waters Part of Eastern Indian Ocean (D. Novianto, B. Setyadji, L. Sadiyah, F. Satriya, U. Chodrijah, Agustinus A. Widodo, Wudianto, A. F. Nugroho)

### 7.2. Stock assessment models (all)

- IOTC-2023-WPEB19-32: Assessment of the shark stock complex in the Bering Sea/Aleutian Islands and Gulf of Alaska (C. A. Tribuzio, M. A. Matta, K. B. Enchave, C. Rodgveller, G. Dunne and K. Fuller)

### 7.3. Recommendation and executive summaries (all)

## 8. NEW INFORMATION ON BIOLOGY, ECOLOGY, FISHERIES AND ENVIRONMENTAL DATA RELATING TO ECOSYSTEMS AND BYCATCH SPECIES (Chair)

- 8.1. Review new information on the environment and ecosystem interactions and modelling, including climate change issues affecting pelagic ecosystems in the IOTC area of responsibility (all)
- Ecosystems and climate
  - Impact of gears
  - Mitigation devices/techniques
- IOTC-2023-WPEB19-22: SMARTSNAP: A new device to aid in the reduction of bycatch in longline fisheries (A.E. Nieblas, T. Rouyer, S. Bonhommeau, S. Benard, J. Chanut, A. Boyer, O. Derridj, B. Brisset, H. Evano, V. Kerzerho)
- IOTC-2023-WPEB19-23\_rev1: A review of the effectiveness of gear modifications to reduce shark bycatch mortality in longlining (I. Ziegler)
- IOTC-2023-WPEB19-31: Turtles, TEDs, tunas, dolphins, and diffusion of innovations: key drivers of adoption of bycatch reduction devices (L. D. Jenkins)

Information paper:

- IOTC-2023-WPEB19-INF12: Implementing Ecosystem Approach to Fisheries Management in the Western and Central Pacific Fisheries Commission: Challenges and Prospects (H. Shen and L. Song)
- IOTC-2023-WPEB19-INF13: Technical mitigation techniques to reduce bycatch of sharks: there is no silver bullet (D. Drynan and G. B. Baker)
- IOTC-2023-WPEB19-INF14: Efficacy of a novel shark bycatch mitigation device in a tuna longline fishery (P. D. Doherty, R. Enever, L. C. M. Omeyer, L. Tivenan, G. Course, G. Pasco, D. Thomas, B. Sullivan, B. Kibel, P. Kibel, B. J. Godley)
- IOTC-2023-WPEB19-INF15: New technologies to improve bycatch mitigation in industrial tuna fisheries (F. Poisson, P. Budan, S. Coudray, E. Gilman, T. Kojima, M. Musyl and T. Takagi)
- IOTC-2023-WPEB19-INF16: A comparison of catch efficiency and bycatch reduction of tuna pole-and-line fisheries using Japan tuna hook (JT-hook) and circle-shaped hook (C-hook) (K. Q. Nguyen, B. V. Nguyen, H. T. Phan, L. T. Nguyen, P. V. To and H. V. Tran)
- IOTC-2023-WPEB19-INF17: A systematic review of sensory deterrents for bycatch mitigation of marine megafauna (S. Lucas and P. Berggren)
- IOTC-2023-WPEB19-INF18: Bycatch mitigation of protected and threatened species in tuna purse seine and longline fisheries (Y. Swimmer, E. A. Zollett, A. Gutierrez)
- IOTC-2023-WPEB19-INF19: Multifaceted effects of bycatch mitigation measures on target/non-target species for pelagic longline fisheries and consideration for bycatch management (D. Ochi, K. Okamoto and S. Ueno)
- IOTC-2023-WPEB19-INF20: A decision support tool for integrated fisheries bycatch management (E. Gilman, M. Hall, H. Booth, T. Gupta, M. Chaloupka, H. Fennell, M. J. Kaiser, D. Karnad, E. J. Milner-Gulland)
- IOTC-2023-WPEB19-INF21: Bycatch-neutral fisheries through a sequential mitigation hierarchy (E. Gilman, M. Chaloupka, H. Booth, M. Hall, H. Murua and J. Wilson)

8.2. Development of climate change work plan (all)

**9. BYCATCH, SPECIES INTERACTIONS, AND ECOSYSTEM RISK ASSESSMENTS FOR OTHER SHARK SPECIES, MARINE MAMMALS, SEABIRDS, AND SEA TURTLES**

9.1. All bycatch species (all)

9.2. Other sharks and rays

Information papers:

- IOTC-2023-WPEB19-INF01: Identification guide for species caught in pelagic tropical fisheries - v2.1 (English version) (P.S. Sabarros, F. Moussy, E. Mollier)
- IOTC-2023-WPEB19-INF23: Regional variation in anthropogenic threats to Indian Ocean whale sharks (S. D. Reynolds, B. M. Norman, C. E. Franklin, S. S. Bach, F. G. Comezzi, S. Diamant, M. Y. Jaidah, S. J. Pierce, A. J. Richardson, D. P. Robinson, C. A. Rohner and R. G. Dwyer)
- IOTC-2023-WPEB19-INF24: Policy and transparency gaps for oceanic shark and rays in high seas tuna fisheries (M. R. Cronin, J. E. Amaral, A. M. Jackson, J. Jacquet, K. L. Seto and D. A. Croll)

### 9.3. Mobulids (all)

#### Information papers:

- IOTC-2023-WPEB19-INF02: Note on incidents of oceanic manta ray (*Mobula birostris*) fishing gear entanglements from the Maldives (S. Hilbourne and G. Stevens)
- IOTC-2023-WPEB19-INF25: High bycatch rates of manta and devil rays in the “small-scale” artisanal fisheries of Sri Lanka (D. Fernando and J. D. Stewart)
- IOTC-2023-WPEB19-INF26: Comparative population genomics of manta rays has global implications for management (E. Humble, J. Hosegood, G. Carvalho, M. de Bruyn, S. Creer, G. M. W. Stevens, A. Armstrong, R. Bonfil, M. Deakos, D. Fernando, N. Froman, L. R. Peel, S. Pollett, A. Ponzo, J. D. Stewart, S. Wintner and R. Ogden)

### 9.4. Marine mammals (all)

- Review new information on marine mammal biology, ecology, fisheries interactions and bycatch mitigation measures (all);
- Best practice guidelines for safe release and handling of cetaceans (all);
- Development of management advice on the status of marine mammal species (all)
- IOTC-2023-WPEB19-24: Ecological risk assessment of cetaceans to Indian Ocean tuna fisheries (J. Kiszka)
- IOTC-2023-WPEB19-25: International Whaling Commission activities relevant to the assessment of cetacean bycatch in the Indian Ocean (C. Passadore)
- IOTC-2023-WPEB19-26: Advancing tools and survey effort for cetacean distribution assessment in the southwest Indian Ocean, and developing capacity to respond to cetacean entangled in fishing gear (V. Dulau, E. Leroy, A. Fajeau, V. Estrade and J. Martin)
- IOTC-2023-WPEB19-27: Unilateral and multilateral approaches to cetacean bycatch management: risk and potential under the U.S. Marine Mammal Import Provisions Rule for IOTC Members (B. Elliot)
- IOTC-2023-WPEB19-28: Drift gillnet vessels from space: leveraging low-cost methodologies for enhanced understanding of a data-poor fishery (B. Elliot)

#### Information papers:

- IOTC-2023-WPEB19-INF03: Bycatch in Drift Gillnet Fisheries: a sink for Indian Ocean cetaceans (B. Elliot)
- IOTC-2023-WPEB19-INF22: Spatially explicit risk assessment of marine megafauna vulnerability to Indian Ocean tuna fisheries (L. Roberson, C. Wilcox, G. Boussarie, E. Dugan, C. Garilao, K. Gonzalez, M. Green, S. Kark, K. Kaschner, C. J. Klein, Y. Rousseau, D. Vallentyne, J. E. M. Watson and J. J. Kiszka)

### 9.5. Seabirds (all)

- Review new information on seabird biology, ecology, fisheries interactions and bycatch mitigation measures (all)
- IOTC-2023-WPEB19-29: Updated ACAP Advice on Reducing the Bycatch of Albatrosses and Petrels in IOTC Pelagic Longline Fisheries (S. Jiminez)

#### Information paper:

- IOTC-2023-WPEB19-INF37: Global prevalence of setting longlines at dawn highlights bycatch risk for threatened albatross (D. Kroodsma, J. Turner, C. Luck, T. Hochberg, N. Miller, P. Augustyn, S. Prince)

#### 9.6. Sea turtles

- Review new information on marine turtle biology, ecology, fisheries interactions and bycatch mitigation measures (all)
  - Review of indicators for sea turtles (all);
- IOTC-2023-WPEB19-30\_rev1: Methods for mitigating sea turtle bycatch in longline fisheries: a meta-analysis (H. Yan)

#### Information papers:

- IOTC-2023-WPEB19-INF27: Assessing the effectiveness of LED lights for the reduction of sea turtle bycatch in an artisanal gillnet fishery – a case study from the north coast of Kenya (T. Kakai)
- IOTC-2023-WPEB19-INF28: Reducing sea turtle bycatch with net illumination in an Indonesian small-scale coastal gillnet fishery (D. A. Gautama, H. Susanto, M. Riyanto, R. I. Wahyu, M. Osmond and J. H. Wang)
- IOTC-2023-WPEB19-INF29: Loggerhead turtle oceanic-neritic habitat shift reveals key foraging areas in the Western Indian Ocean (J. R. Monsinjon, A. Laforge, P. Gaspar, A. Barat, O. Bousquet, S. Ciccione, C. Jean, K. Ballorain, M. Dalleau, R. Coelho, S. Bonhommeau and J. Bourjea)

### 10. WPEB PROGRAM OF WORK (RESEARCH AND PRIORITIES)

#### 10.1. Revision of the WPEB Program of Work 2024-2028 (Chairperson and IOTC Secretariat)

- IOTC-2023-WPEB19-09: WPEB Program of Work 2024-2028 (IOTC Secretariat)

#### 10.2. Development of priorities for an Invited Expert at the next WPEB meeting (Chairperson)

### 11. OTHER MATTERS (Chair)

#### 11.1. Election of new Chairs for the Working Party on Ecosystems and Bycatch (all)

#### 11.2. Date and place of the 20<sup>th</sup> and 21<sup>st</sup> Working Party on Ecosystems and Bycatch (Chair)

#### 11.3. Review of the draft, and adoption of the Report of the 19<sup>th</sup> Session of the (Chairperson)