

Comisión Interamericana del Atún Tropical
Inter-American Tropical Tuna Commission



WSDAT-01-01: Staff recommendations and proposed data fields

1st Workshop on improvements in data collection and provision: Industrial longline fishery
9-11 January 2023

T-RFMO Comparison table of types of data received

Type of data	Description of statistical data	<u>IATTC*</u>	<u>WCPFC</u>	<u>IOTC</u>	<u>ICCAT</u>
TASK I ANNUAL CATCHES	Annual catches	Gross annual removals by species, by year, gear and disposition (retained or discarded)	Estimates of annual catches by gear type for BET, SKJ, YFT, BLU and BLM, ALB, MLS, SWO and PBF, BSH, FAL, OCS, MAK, THR, POR, HAM (winghead, scalloped, great, and smooth), and RHN	Estimates of total annual retained catches by species and type of fishery (obligatory for IOTC spp. and Sharks; voluntary for other spp).	Nominal annual catch of tuna, tuna-like spp and sharks by region, gear, flag and species,
TASK I EFFORT	Annual effort statistics	The number of fishing vessels, by gear, operating in the Antigua Convention Area in each calendar year	The number of vessels active in the WCPFC Statistical Area during each calendar year	Total annual number of fishing crafts operated by type of fishery, type of craft and craft size	Number of fishing vessels by size classes, gear and flag
TASK II CATCH & EFFORT	Aggregated catches	TASK II level 2: 1°x1°-month aggregated data TASK II level 3: 5°x5°-month aggregated data	Longline catch and effort data shall be aggregated by 5°x5°-month.	Catch and effort in number of hooks set by 5° grid area and month (obligatory for IOTC spp. & Sharks; voluntary for other bycatch)	Catch and effort statistics by area, gear, flag, species and by month. (longline: 5x5 or higher resolution)
TASK II CATCH & EFFORT	Operational level (logbook) catch and effort data	Level 1 data are not provided. Access to operational-level data provided through MoUs with individual CPCs and with limited access to the data	Individual sets by longliners. Activity; Date/Time start of set; Set position, Number of hooks per set; Number of branch lines between floats, Number of fish caught per set Also see Attachment K, Annex 1 for tables describing data fields (https://meetings.wcpfc.int/node/16231)	Only available for specific projects (e.g. CPUE analysis for deriving indices of abundance)	Only available to specific scientists for particular projects, or for species groups in a specific condition

T-RFMO Comparison table of types of data received

- Take home points
 - § TASK I data:
 - § all t-RFMOs collect similar data (annual catches; varied spp. lists; # of fishing vessels)
 - § TASK II aggregated data:
 - § all t-RFMOs collect 5x5 data by month and species (varied spp. lists)
 - § TASK II operational-level data:
 - § only WCPFC receives operational-level data for individual LL sets
 - § other t-RFMO's have been granted access for a limited time for dedicated projects

Task I – annual data

1. Report TASK I effort*, catch and disposition (retained or discarded) for tunas, billfishes and sharks (Table 3a) and expand it to include, to the highest taxonomic resolution possible, where available, other relevant taxa (Table 3b).

* Where catch is defined as gross annual removals in metric tons and effort is the number of active fishing vessels in the Antigua Convention area and total number of hooks



Recommendations: Species lists (tunas, billfishes, sharks)

Taxonomic Group	Common name	Scientific or family name	ASFIS code
Tunas	Albacore tuna	<i>Thunnus alalunga</i>	ALB
	Bigeye tuna	<i>Thunnus obesus</i>	BET
	Pacific bluefin tuna	<i>Thunnus orientalis</i>	PBF
	Skipjack tuna	<i>Katsuwonus pelamis</i>	SKJ
	Yellowfin tuna	<i>Thunnus albacares</i>	YFT
	Unidentified tunas nei	Scombridae nei	TUN
	Eastern Pacific bonito	<i>Sarda chiliensis</i>	BEP
	Striped bonito	<i>Sarda orientalis</i>	BIP
	Unidentified bonitos	<i>Sarda</i> spp.	BZX
	Black skipjack tuna	<i>Euthynnus lineatus</i>	BKJ
Black marlin	<i>Istiompax indixa</i>	BLM	
Billfishes	Blue marlin	<i>Makaira nigricans</i>	BUM
	Striped marlin	<i>Kajikia audax</i>	MLS
	Sailfish	<i>Istiophorus platypterus</i>	SFA
	Shortbill spearfish	<i>Tetrapturus angustirostris</i>	SSP
	Unidentified billfishes, but not including swordfish ⁸	Istiophoridae nei	BIL
	Swordfish	<i>Xiphias gladius</i>	SWO

⁸ not elsewhere identified

Taxonomic Group	Common Name	Scientific or family name	ASFIS Code
Sharks*	Blue shark	<i>Prionace glauca</i>	BSH
	Silky shark	<i>Carcharhinus falciformis</i>	FAL
	Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	OCS
	Shortfin mako	<i>Isurus oxyrinchus</i>	SMA
	Longfin mako	<i>Isurus paucus</i>	LMA
	Mako sharks nei ⁸	<i>Isurus</i> spp. nei	MAK
	Bigeye thresher shark	<i>Alopias superciliosus</i>	BTH
	Pelagic thresher shark	<i>Alopias pelagicus</i>	PTH
	Common thresher shark	<i>Alopias vulpinus</i>	ALV
	Thresher sharks nei ⁸	<i>Alopias</i> spp. nei	THR
	Great hammerhead shark	<i>Sphyrna mokarran</i>	SPK
	Scalloped hammerhead shark	<i>Sphyrna lewini</i>	SPL
	Smooth hammerhead shark	<i>Sphyrna zygaena</i>	SPZ
	Scalloped bonnethead shark	<i>Sphyrna corona</i>	SSN
	Scoophead shark	<i>Sphyrna media</i>	SPE
	Bonnethead shark	<i>Sphyrna tiburo</i>	SPJ
	Hammerhead sharks nei ⁸	Sphyrnidae nei	SPY
Porbeagle shark	<i>Lamna nasus</i>	POR	
Whale shark	<i>Rhincodon typus</i>	RHN	

* And other sharks (as listed in WSDAT-01-01, Table 3b), where available

⁸ not elsewhere identified

Recommendations: Species lists (other sharks, rays, turtles, seabirds, mammals)

Taxonomic Group	Common name	Scientific or family name	ASFIS code
Sharks	Salmon shark	<i>Lamna ditropis</i>	LMD
	Tiger shark	<i>Galeocerdo cuvier</i>	TIG
	Great white shark	<i>Carcharodon carcharias</i>	WSH
	Sand tiger shark	<i>Carcharias taurus</i>	CCT
	Blacktip shark	<i>Carcharhinus limbatus</i>	CCL
	Spottail shark	<i>Carcharhinus sorrah</i>	CCQ
	Silvertip shark	<i>Carcharhinus albimarginatus</i>	ALS
	Bull shark	<i>Carcharhinus leucas</i>	CCE
	Copper shark	<i>Carcharhinus brachyurus</i>	BRO
	Dusky shark	<i>Carcharhinus obscurus</i>	DUS
	Galapagos shark	<i>Carcharhinus galapagensis</i>	CCG
	Sandbar shark	<i>Carcharhinus plumbeus</i>	CCP
	Carcharhinus sharks nei	<i>Carcharhinus</i> spp.	CWZ
	Requiem sharks nei	Carcharhinidae	RSK
	Crocodile shark	<i>Pseudocarcharias kamoharai</i>	PSK
	Longnose velvet dogfish	<i>Centroscymnus crepidater</i>	CYP
	Velvet dogfish	<i>Scymnodon squamulosus</i>	SSQ
	Cookie cutter shark	<i>Isistius brasiliensis</i>	ISB
	Bigeye sand tiger shark	<i>Odontaspis noronhai</i>	ODH
	Nurse shark	<i>Ginglymostoma cirratum</i>	GNC
Sicklefin smooth-hound	<i>Mustelus lunulatus</i>	MUU	
Speckled guitarfish	<i>Rhinobatos glaucostigma</i>	RBL	
Tope shark	<i>Galeorhinus galeus</i>	GAG	
Whitenose shark	<i>Nasolamia velox</i>	CNX	
Kitefin shark	<i>Dalatias licha</i>	SCK	
Sharks nei	Elasmobranchii	SKX	

Taxonomic Group	Common Name	Scientific or family name	ASFIS Code	
Rays	Pelagic stingray	<i>Pteroplatytrygon violacea</i>	PLS	
	Stingrays nei	<i>Dasyatis</i> spp.	STI	
	Alfred manta	<i>Mobula alfredi</i>	RMA	
	Giant manta	<i>Mobula birostris</i>	RMB	
	Devil fish	<i>Mobula mobular</i>	RMM	
	Munk's devil ray	<i>Mobula munkiana</i>	RMU	
	Chilean devil ray	<i>Mobula tarapacana</i>	RMT	
	Smoothtail manta	<i>Mobula thurstoni</i>	RMO	
	Manta rays nei	<i>Mobula</i> spp.	RMV	
	Turtles	Olive Ridley turtle	<i>Lepidochelys olivacea</i>	LKV
	Green turtle	<i>Chelonia mydas</i>	TUG	
	Loggerhead turtles	<i>Caretta caretta</i>	TTL	
	Hawksbill turtle	<i>Eretmochelys imbricata</i>	TTH	
	Leatherback turtle	<i>Dermochelys coriacea</i>	DKK	
	Seabirds	Albatrosses nei	Diomedidae	ALZ
	Petrels nei	<i>Procellaria</i> spp.	PTZ	
	Shearwaters nei	<i>Puffinus</i> spp.	PQW	
	Seagulls nei	<i>Larus</i> spp.	LHX	
	Boobies and gannets nei	Sulidae spp.	SZV	
	Marine Mammals	Pantropical spotted dolphin	<i>Stenella attenuata</i>	DPN
	Spinner dolphin	<i>Stenella longirostris</i>	DSI	
	Striped dolphin	<i>Stenella coeruleoalba</i>	DST	
	Rough-toothed dolphin	<i>Steno bredanensis</i>	RTD	
	Common dolphin	<i>Delphinus delphis</i>	DCO	
	Long-beaked common dolphin	<i>Delphinus</i> sp.		
	Bottlenose dolphin	<i>Tursiops truncatus</i>	DBO	
	Risso's dolphin	<i>Grampus griseus</i>	DRR	
	Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	DWP	
	False killer whale	<i>Pseudorca crassidens</i>	FAW	
	Melon-headed whale	<i>Peponocephala electra</i>	MEW	
	Dolphins nei	Delphinidae	DLP	
	Pilot whales nei	<i>Globicephala</i> spp.	GLO	



Recommendations: Species lists (fishes)

Taxonomic Group	Common Name	Scientific or family name	ASFIS Code
Fishes	Common dolphinfish	<i>Coryphaena hippurus</i>	DOL
	Pompano dolphinfish	<i>Coryphaena equiselis</i>	CFW
	Dolphinfishes nei	Coryphaenidae	DOX
	Wahoo	<i>Acanthocybium solandri</i>	WAH
	Jacks, crevalles nei	<i>Caranx</i> spp.	TRE
	Rainbow runner	<i>Elagatis bipinnulata</i>	RRU
	Yellowtail amberjack	<i>Seriola lalandi</i>	YTC
	Longfin yellowtail	<i>Seriola rivoliana</i>	YTL
	Greater amberjack	<i>Seriola dumerilli</i>	AMB
	Samson fish	<i>Seriola hippos</i>	RLH
	Amberjacks nei	<i>Seriola</i> spp.	AMX
	Sunfish	<i>Mola</i> spp.	MOP
	Barracudas nei	Sphyraenidae	BAZ
	Opah	<i>Lampris guttatus</i>	LAG
	Opahs nei	<i>Lampris</i> spp.	LAP
	Escolar	<i>Lepidocybium flavobrunneum</i>	LEC
	Oilfish	<i>Ruvettus pretiosus</i>	OIL
	Luvar	<i>Luvaris imperialis</i>	LVM
	Snake mackerel	<i>Gempylus serpens</i>	GES
	Snake mackerels, escolars nei	Gempylidae	GEP
	Long snouted lancetfish	<i>Alepisaurus ferox</i>	ALX
	Short snouted lancetfish	<i>Alepisaurus brevirostris</i>	ALO
	Lancetfishes nei	<i>Alepisaurus</i> spp.	ALI
	Sickle pomfret	<i>Taractichthys steindachneri</i>	TST
	Dagger pomfret	<i>Taractes rubescens</i>	TCR
	Big-scale pomfret	<i>Taractichthys longipinnis</i>	TAL
	Rough pomfret	<i>Taractes asper</i>	TAS
	Pomfrets, ocean breams nei	Bramidae	BRZ

Noting species composition varies depending on gear type; Bramidae, Gempylidae, Lampridae, Alepisauridae commonly seen in LL data

National regulations

2. Ensure that the relevant national laws and regulations recognize the IATTC Secretariat as a custodian of confidential operational-level longline data needed for scientific research pursuant to the objective, rules, and relevant provisions of the Antigua Convention and measures adopted by the IATTC.

Task II – logbooks

3.1 Mandate the reporting of TASK II, level 1, operational-level (set-by-set) logbook data—for current and historical data, when available—using the data fields in Table 4, or at a minimum the fields in Tables 1a* and 1b**, to be used in scientific research pursuant to the objective, rules, and relevant provisions of the Antigua Convention and measures adopted by the IATTC.

* Fields reported to the WCPFC

** 3 additional fields



Table 1a WCPFC logbook fields

LL TRIP	TRIP IDENTIFIER
	VESSEL IDENTIFIER
	COUNTRY OF CHARTER
	AGENT FOR UNLOADING
	TRIP NUMBER
	PRIMARY TARGET SPECIES
	PORT/PLACE OF DEPARTURE
	PORT/PLACE OF UNLOADING
	DATE OF DEPARTURE
	DATE and TIME OF DEPARTURE
	DATE OF UNLOADING
	DATE and TIME OF UNLOADING
LICENSE PERMIT DATA	FISHING PERMIT'/LICENSE
NUMBERS	
LL ACTIVITY/SET DATA	ACTIVITY
	DATE/TIME ACTIVITY
	START TIME OF SET
	POSITION LATITUDE
	POSITION LONGITUDE
	NUMBER OF BRANCHLINES
	NUMBER OF HOOKS
LL CATCH DATA	SPECIES CODE
	CATCH NUMBER
	CATCH WEIGHT
	DISCARDED / RELEASED NUMBER

Table 1 a – WCPFC selected fields

<i>Vessel and gear characteristics</i>	WCPFC logbook fields
	Flag (Vessel flag abbreviation)
	Unique Vessel Identifiers:
<i>Trip-characteristics</i>	Departure Date
	Departure Port
	Arrival Date
	Arrival Port
<i>Set-by-set information</i>	Target species of target type or target species groups
	DateTime of set start
	Latitude at start of set
	Longitude at start of set
	Number of hooks in the set
	Number of floats
<i>Catch data</i>	Species
	Catch number
	Catch weight

Table 1a + 1 b WCPFC selected fields + additional proposed fields

<i>Vessel and gear characteristics</i>	IATTC proposed logbook fields
	Flag (Vessel flag abbreviation)
	Unique Vessel Identifiers:
	Mainline material
<i>Trip-characteristics</i>	Departure Date
	Departure Port
	Arrival Date
	Arrival Port
<i>Set-by-set information</i>	Target species of target type or target species groups
	DateTime beginning of daily fishing activities: UTC and vessel opera
	DateTime of set start
	DateTime of set end
	Latitude at start of set
	Longitude at start of set
	Number of hooks in the set
	Number of floats
	Number of light sticks
Catch data	Species
	Catch number
	Catch weight

Table 4 – Ideal list of fields

Vessel and	IATTC proposed logbook fields
	Flag (Vessel flag abbreviation)
	Unique Vessel Identifiers:
	Length over all (Length of the vessel (m))
	Gross tonnage (Vessel Gross Registered)
	Vessel electronics:
	Refrigeration type:
	Mainline material
	Branch line material(s)
Trip-chara	Departure Date
	Departure Port
	Arrival Date
	Arrival Port
	Was an observer onboard (Y/N)

Catch data	Species
	Catch number
	Catch weight
	Discarded/Released number
	Size information for individual fish

Set-by-set	Target species of target type or target sp
	DateTime beginning of daily fishing acti
	DateTime of set start
	DateTime of set end
	DateTime of haul start
	DateTime of haul end
	Haul direction
	Latitude at start of set
	Longitude at start of set
	Latitude at end of set
	Longitude at end of set
	Latitude at haul start
	Longitude at haul start
	Latitude at haul end
	Longitude at haul end
	Wire trace
	Use of shark line
	Number of hooks in the set
	Number of floats
	Number of hooks between floats
	Float line length
	Branch line length
	Was a shooter used? (Y/N)
	If yes, Line shooter speed (Line shooter
	Vessel speed
	Hook type
	Line shooter speed
	Hook size
	Bait type
	Blue dyed bait used
	Number of light sticks
	Maximum depth of the fishing gear

Task II – aggregated data in space and time

3.2. Until the coverage of the operational-level logbook data provided to the Commission is 100%, report TASK II catch and effort data at the finest spatial and temporal resolution possible, as a minimum by month and $5^{\circ} \times 5^{\circ}$, raised to represent the total catch and effort, and indicating the statistical methods used to estimate total catches*. For data previously submitted, indicate whether it was raised and describe the methodology.

*Following WCPFC (see Table 2 Estimation methods), provide reference to the coverage rates for each type of data (e.g. operational catch and effort data, records of unloadings, species composition sampling data) that is used to estimate the catches and to the conversion factors that are used to convert the processed weight of longline caught fish to whole weight information about the relationships and methods used to raise the data



Task II – Size composition data

4. Mandate the reporting of size composition data in the originally measured type* and unit for tunas, billfishes and sharks (Table 3a), and, if available, other relevant species (Table 3b), that are representative of catches by the fisheries at the finest possible spatial and temporal resolution, revising where feasible, previously submitted data.

*Indicating the measurement type (e.g. whole weight or dressed weight; fork length for tunas, lower-jaw fork length for billfish, total length for sharks) and unit (e.g. kg, cm).



Staff recommendations: LL data reporting

5. Ensure that the updating and revision of Resolution C-03-05, as recommended by the SAC, includes the items above.

Staff recommendations: LL data reporting

1. Report TASK I effort, catch and disposition (retained or discarded) for tunas, billfishes and sharks (Table 3a) and expand it to include, to the highest taxonomic resolution possible, where available, other relevant taxa (Table 3b).
2. Ensure that the relevant national laws and regulations recognize the IATTC Secretariat as a custodian of confidential operational-level longline data needed for scientific research pursuant to the objective, rules, and relevant provisions of the Antigua Convention and measures adopted by the IATTC.
 - 3.1 Mandate the reporting of TASK II, level 1, operational-level logbook data—for current and historical data, when available—using the data fields in Table 4, or at a minimum the fields in Tables 1a and 1b, to be used in scientific research pursuant to the objective, rules, and relevant provisions of the Antigua Convention and measures adopted by the IATTC.
 - 3.2. Until the coverage of the operational-level logbook data provided to the Commission is 100%, report TASK II catch and effort data at the finest spatial and temporal resolution possible, as a minimum by month and 5°x5°, raised to represent the total catch and effort, and indicating the statistical methods used to estimate total catches. For data previously submitted, indicate whether it was raised and describe the methodology.
4. Mandate the reporting of size composition data in the originally measured type and unit for tunas, billfishes and sharks (Table 3a), and, if available, other relevant species (Table 3b), that are representative of catches by the fisheries at the finest possible spatial and temporal resolution⁶, revising where feasible, previously submitted data.
5. Ensure that the updating and revision of Resolution C-03-05, as recommended by the SAC, includes the items above.



Staff recommendations: Options for reporting mechanisms

RECOMMENDATIONS:

That the IATTC staff develop:

1. Standards, guidelines and templates for mandatory data fields, thereby allowing CPCs to submit the forms as long as they follow these templates in their preferred format (e.g. CSV, XLS).
2. Default digital templates in Excel to ease CPCs workflow.
3. Online forms and e-reporting apps, in the longer term.