

COMISIÓN INTERAMERICANA DEL ATÚN TROPICAL

COMITÉ CIENTÍFICO ASESOR

NOVENA REUNIÓN

La Jolla, California (EE.UU.)

14-18 de mayo de 2018

DOCUMENTO SAC-09 INF A

RESUMEN DE LOS INFORMES PRESENTADOS POR CPCs DE CONFORMIDAD CON LA RESOLUCIÓN C-11-08

This paper and accompanying tables provide a brief overview of current reporting by CPCs in response to reporting requirements under Resolution C-11-08, which requires CPCs to place observers to collect operational and catch data from a portion of longline vessels operating in the EPO. The Resolution mandated the SAC to establish the format of these reports, which necessarily refers to also to their content, including the nature of the data and other relevant information reported by the observer programs, and by extension, the fleets which are the subject of their observations.

To date the SAC, working with the IATTC staff, have established three reporting requirements: 1) summary national reports; 2) operational-level longline observer data; and 3) metadata for the longline fleet.

Annual Summary Reports

The first reporting requirement established was the annual summary reports that are submitted to the SAC by each CPC with a longline observer program. One of the primary purposes of these summary reports is the reporting of the CPCs observer coverage rate within the context of their overall longline effort, but other summary statistics are also to be submitted.

In 2012, the SAC adopted *effective days fishing* as the effort unit for calculating observer coverage. This is defined as the number of days at sea excluding transit days. In March 2014, IATTC staff circulated a list of 15 fields recommended for reporting in the annual summaries (Attachment 1). Since this time, the summary reports submitted by CPCs have tracked this format to varying degrees. The annual summary reports for longline observer programs during 2017 are currently posted on with the [meeting documents for SAC-09](#) under the headings SAC-09 INF A(a-j).

Table 1 summarizes the information provided in these summary reports as compared to the 15 fields recommended in 2014. For those CPCs that submitted summary reports, the overall reporting rate against these fields is fair, but very few of them are reported consistently by all reporting CPCs. However, of most concern is the inconsistent method for calculating the observer coverage rate relative to the total effort of each longline fleet. This is a concern because these are arguably the most

important summary statistics provided, since they not only show the level of implementation relative to the 5% requirement, but they are also critical in terms of allowing observer data to be extrapolated to characterize the longline fisheries as a whole. Among the 10 reports received from CPCs this year, only one clearly states that the observer coverage rate was calculated based on the established standard of *effective days fishing*. The other rates provided are calculated using other measures of effort such as fishing days, sets, fishing operations, observed days, and trips. Some of these may approximate, or be considered equivalent to, *effective fishing days*, but since a term other than *effective fishing days* is used, we must assume that they could be different than the established reporting standard.

Considering the lack of consistent reporting with respect to the established measure of effort and observer coverage under C-11-08, along with other improvements that could be made to the national summary reports, IATTC staff recently proposed a set of revised standards for national reports (Attachment 2). Table 2 reflects the reporting found in the national summary reports for 2017 to the fields contained in the IATTC staff proposal. As might be expected, the reporting rates against this new suite of unestablished fields is not as strong, but all of the proposed fields are currently reported by at least some CPCs.

One field that warrants special attention is that of *Total observed hooks*, which is currently reported by 90% of the reporting CPCs. If total hooks for each CPC's longline fisheries were also included in the report—as is already the case where CPCs report logbook and unloading records data to the IATTC under Resolution C-03-05— this would represent a far superior and transparent measure of effort and observer coverage than *effective days fished*. Even if the SAC does not wish to change the standard of effort for measuring compliance with the Resolution, these fields should be adopted as a standard for summary annual reporting because they, along with the other newly included fields that can be used to characterize effort, will be more valuable for scientific endeavors than *effective days fished*.

The other key element contained in the IATTC staff proposal is the division of all of the reporting elements into separate categories for shallow- and deep-sets, as defined therein. IATTC staff consider that shallow and deep longline fisheries can target different species, use different bait and gear, and interact with different suites of non-target species. Therefore, differentiation between set types in the summary data is warranted both from a scientific perspective and to conform to section 3 of C-11-08 that “*Each CPC shall endeavor to ensure that observer coverage will be representative of the activities of its fleet*”. This differentiation is also relevant to the consideration of observer coverage rates and whether the observer coverage in a given year is representative of a CPC's longline fisheries overall. For example, if a given CPCs fleet was dominated by deep-set longline fisheries, but the bulk of the annual observer coverage was, for logistical reasons carried out on shallow-set vessels, it would be very important to be able to take that into account during extrapolation or other investigations based on the IATTC longline observer data holdings.

IATTC staff asks the SAC to consider the potential value of the fields proposed and adopt a new set of standard data fields for summary annual reports under C-11-08. The staff also recommends that the SAC consider adopting *hooks fished* as the primary standard for measuring fishing effort and observer coverage under the Resolution, noting that the current standard of *effective fishing days* is reported by

as few as 10% of reporting CPCs and is otherwise an ambiguous and therefore less desirable measure of longline fishing effort.

Operational Observer Data

In 2017, SAC08 established minimum data standards for the reporting of operational-level longline observer data to the Commission, allowing CPCs to choose between two options for reporting. The first option is to collect and report data consistent with the data fields found in the IATTC longline observer forms. The alternative is to collect and submit data relating to an approved set of data fields that represent a subset of the WCPFC list of minimum standard data fields. Noting that although the formats for reporting were only established last year, the observer requirement under C-11-08 entered into force in 2013. Thus, CPCs should possess observer data for the years 2013-2017 that should now be reported to the Commission.

Table 3 shows what has been received by the IATTC staff as of May 1, 2018. Two of the relevant CPCs have recently supplied their observer data for the entire period of 2013-2017, but the vast majority of CPCs have not provided observer data for any year.

The column for 2017 is colored yellow rather than red in recognition of an outstanding issue of timing of submission that has not been fully considered by the SAC. Resolution C-11-08 states that information that the SAC requires for submission should be received by March 31 of the following year, which is clear and seems definitive. However, IATTC staff recognizes that some CPCs have indicated that they cannot provide complete catch data and other statistics sooner than the June 30 deadline for annual data submissions and perhaps submission of operational observer data might be subject to similar limitations. We note that, with respect to the national summary reports, one CPC is this year reporting on the year 2016 rather than 2017, while another has reported partial data for 2017 and has committed to providing complete summary data for 2017 in their report for SAC10.

IATTC staff encourages all CPCs that have not already done so to provide their operational data for 2013-2017 as soon as possible. To that end, we note that one CPC has stated that because they would report according to the set of data standards shared with WCPFC, and because the current WCPFC standards came into effect in 2015, they cannot provide their observer data for 2013 and 2014. We respectfully ask members in this situation to strive to find a way to submit as much of their observer data from those years as they can, and if necessary, to help the SAC find a way of overcoming any procedural barriers that might exist at the national level. CPCs were required to have observer programs in place and to begin collecting data as of January 1, 2013, and it would be best to have observer data from all CPCs for the entire time-period.

Metadata

At its 7th Meeting, in May 2016, the SAC agreed that CPCs should submit to the Commission a standard suite of metadata fields (Annex 2) using a format developed by ICCAT with a similar set of fields (See [Report of SAC07](#), Appendix D). To date only one CPC has provided this data (Table 3). Although the SAC did not establish a deadline for submitting this standard suite of metadata fields to the IATTC, it would be advisable to provide it as soon as possible.

TABLE 1. Reporting based on Circular Ref: 087-410 of 3 March 2014

Country	Non-coastal fishing entities				EPO Coastal nations						Not Reporting									
	CHN	JPN	KOR	TWN	BLZ	CHL	ECU	MEX	ESP	USA	CRI	FRA	GTM	NIC	PAN	PER	PRT	SLV	VEN	VUT
2017																				
Fishing year – report submitted	Y	N ²	Y	P ⁵	Y	Y	Y	Y	Y	Y										
Total catches (mt)	N	N	N	Y	Y	Y	Y	Y	Y	N										
Fleet total efforts- effective fishing days	N	N ³	N	N ³	N	Y	N ⁶	N ⁶	N ⁶	P ²										
% observer coverage of effort- effective fishing days	N ¹	N ³	N ⁴	N ³	N ⁶	Y	N ⁶	N ⁶	N ⁶	N ⁷ /P ²										
	Predicted over 5%	7.18 %	4.10 %	4.03% with received data, but estimated to reach 9.73-10.41%	70%	100%	10.20 %	12.36 %	4.64 %	100% for shallow sets, predicted over 20% for deep sets										
%																				
Total observed catch	Y	Y	N	Y	Y	Y	Y	Y	Y	Y										
Species composition of observed catch	Y	P ⁴	Y	P ¹	P ³	P ³	Y	P ³	Y	Y										
Number of vessels with observers	N	N	N	Y	Y	Y	Y	Y	Y	N										
Observed turtle catch	Y	Y	Y	Y	Y	Y	Y	N ⁵	Y	Y										
Observed turtle release	N	Y	N	Y	Y	N	N	Y	Y	Y										
Observed shark catch	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y										
Observed ray catch	Y	Y	N	Y	Y	Y	Y	Y	N	Y										
Observed billfish catch	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y										
Observed total hooks	Y	N	Y	Y	Y	Y	Y	Y	Y	N										
Type of hooks	Y	N	N	Y	Y	Y	Y	Y	Y	Y										

Table 1. Footnotes

N¹ - Will be reported when all data available based upon "fishing days", expected to be above 5%

N²- Report provided for 2016 fishing year

N³ - Reported as sets or fishing operations

N⁴- Reported as observed days

N⁵ - Reported a per/trip interaction rate

N⁶ - Reported as "fishing days"

N⁷- Reported as percent of trips

P¹- Reported initially, but not provided when data for complete fishing year was updated or when provided in update it was aggregated

P²- Provided for shallow sets, but not deep sets, with commitment to update when available, but over 20%

P³- Species of retained catch reported, species of non-retained species not reported

P⁴- Only 4 species of shark reported, the rest of sharks and non-retained species reported only to taxa group

P⁵ - Indicates that report is only partial year data for 2017 and that it will be updated next year. Report for 2016 contained the same language, but updated info for 2016 is incomplete in terms of catch compositions

TABLE 2. Comparison of current reporting vs. IATTC staff proposed standardization of March 2018

2017	Non-coastal fishing entities				EPO Coastal fishing entities					
	CHN	JPN	KOR	TWN	BLZ	CHL	ECU	MEX	ESP	USA
Country										
2017 Fishing year summary report	Y	N ²	Y	P ⁵	Y	Y	Y	Y	Y	Y
Total effective fishing days for fleet	N	N ³	N	N ³	N	Y	N ⁹	N ⁹	N ⁹	P ²
Total effective fishing days observed	N ⁹	N ³	N ⁴	N ³	N	Y	N	N	N ⁹	P ²
% observer coverage as effective fishing days	N ¹	N ³	N ⁴	N ³	N ⁹	Y	N ⁹	N ⁹	N ⁹	Y/P ²
observer coverage over 5% of effort	Predicted over 5%	7.18%	4.10%	4.03% with received data, but estimated to reach 9.73-10.41%	70%	100%	10.20%	12.36%	4.64%	100% for shallow sets, predicted over 20% for deep sets
Total number of vessels in fleet	N	N	N	N	N	Y	N	N	Y	N
Number of vessels with observers	N	N	N	Y	Y	Y	Y	Y	Y	N
Total number of hooks for fleet	N	N	N	N	N	Y	N	N	N	N ⁵
Total observed hooks	Y	Y	Y	Y	Y	Y	Y	Y	Y	N ⁵
Total number of sets for fleet	N	Y	N	Y	N	Y	N	N	N	P ²
Total Sets observed	Y	Y	Y	P ¹	N	Y	N	N	N	P ²
Total number of trips observed	Y	Y	Y	Y	N	N	N	N	N	N
Predominant hook type	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Predominant hook size	N	N	N	N	N	Y	N	N	N	N
Distinguish between shallow and deep sets (ideally for categories 4-15)	N	N	N	N	N	Y	N	N	N	Y
Species composition of observed catch	Y	P ⁴	Y	P ¹	P ³	P ³	Y	P ³	Y	Y
Total catches by weight (mt) for retained species, by species	N	N	Y	Y	N ⁶	N	N	N ⁶	Y	N
Total catches, number of individuals for retained species	Y	Y	Y	P ¹	N	Y	Y	Y	N	Y
Total catches, number of individuals for non-retained/bycatch species	Y	Y	Y	P ¹	N ⁷	Y	Y	N ⁷	P ⁶	Y
Retained catch reported by species	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Non-retained catch/bycatch reported by species	Y	N/P ⁴	Y	P ¹	N	N	Y	N	P ⁶	Y
Observed turtle catch	Y	Y	Y	Y	Y	Y	Y	N ⁸	Y	Y
Observed turtle release	N	Y	N	Y	Y	N	Y	Y	Y	Y
Observed shark catch	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observed ray catch	Y	Y	N	Y	Y	Y	Y	Y	N	Y
Observed billfish catch	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

TABLE 2. Footnotes

N¹ - Will be reported when all data available, expected to be above 5%

N²- Report provided for 2016 fishing year

N³ - Reported as sets or fishing operations

N⁴- Reported as observed days

N⁵- Reported a range of number of hooks per set for each fishery

N⁶- Reported a single total observed catch amount across all taxa

N⁷- Reported at general taxa level, but not species

N⁸ - Reported a per/trip interaction rate

N⁹ - Reported as "fishing days"

P¹- Reported initially, but not provided when data for complete fishing year was updated or when provided in update it was aggregated

P²- Provided for shallow sets, but not deep sets, with commitment to update when available, but over 20%

P³- Species of retained catch reported, species of non-retained species not reported

P⁴- Only 4 species of shark reported, the rest of sharks and non-retained species reported only to taxa group

P⁵ - Indicates that report is only partial year data for 2017 and that it will be updated next year. Report for 2016 contained the same language, but updated info for 2016 is incomplete in terms of catch compositions

P⁶- Turtles, marine mammals and billfish were reflected in number of individuals at the species level, sharks and sea birds were not, but taxa totals were given

TABLE 3. Status of reporting of operational observer data and metadata by CPCs

	2013	2014	2015	2016	2017	Metadata
BLZ	Red	Red	Red	Red	Yellow	Red
CHL	Red	Red	Red	Red	Yellow	Red
CHN	Red	Red	Red	Red	Yellow	Red
CRI	Red	Red	Red	Red	Yellow	Red
ECU	Red	Red	Red	Red	Yellow	Red
EU (Portugal)	Red	Red	Red	Green	Yellow	Red
EU (Spain)	Red	Red	Red	Red	Yellow	Red
FRA	Red	Red	Red	Red	Yellow	Red
GTM	Red	Red	Red	Red	Yellow	Red
JPN	Yellow (NA ¹)	Yellow (NA ¹)	Green	Red	Yellow	Green
KOR	Red	Red	Red	Red	Yellow	Green
MEX	Red	Red	Red	Red	Yellow	Red
NIC	Red	Red	Red	Red	Yellow	Red
PAN	Red	Red	Red	Red	Yellow	Red
PER	Red	Red	Red	Red	Yellow	Red
PRT	Red	Red	Red	Red	Yellow	Red
SLV	Red	Red	Red	Red	Yellow	Red
TWN	Green	Green	Green	Green	Green	Red
USA	Green	Green	Green	Green	Green	Red
VEN	Red	Red	Red	Red	Yellow	Red
VUT	Red	Red	Red	Red	Yellow	Red

¹ Japan has stated this since the current WCPFC data standards were not in place until 2015, they cannot report against the IATTC standards for these years

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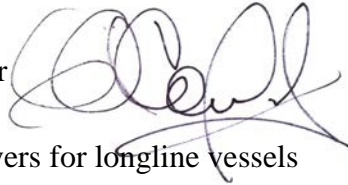
03 March 2014

Ref.: 087-410

To: Commissioners

cc: Bolivia, Honduras, Indonesia, Liberia

From: Guillermo Compeán, Director



Re: Resolution on scientific observers for longline vessels

This is a reminder that Resolution C-11-08 states in paragraph 7 that “*Every year, CPCs shall submit to the Scientific Advisory Committee (SAC), through the Director, **by 31 March**, the scientific observers’ information on the previous year’s fishery in a format established by the Scientific Advisory Committee*”.

In this regard, I have attached the list of information that has been used as the basis for the annual reports. The list includes the information that Resolution C-11-08 establishes as necessary for observers to collect: “*The main task of the scientific observers shall be to record any available biological information, the catches of targeted fish species, species composition and any available biological information as well as any interactions with non-target species such as sea turtles, seabirds and sharks*”.

According to paragraph 1 of the Resolution ... “*Each CPCs shall ensure that, from 1 January 2013, at least 5% of the fishing effort made by its longline fishing vessels greater than 20 meters of length overall carry a scientific observer*”. In my memorandum Ref. 0065-410 dated February 15, 2013 (attached), I informed you that the recommendation made by the SAC at its 2012 annual meeting was to consider fishing effort as effective days fishing (excluding transit days), and the recommendation was approved during the 83rd IATTC Meeting, held in June 2012.

In order to allow the SAC to have at its disposal at its next meeting the information recorded by scientific observers on board longliners, it would be most appreciated if you could send by 31st March, at the latest, the information referred to in Resolution C-11-08, paragraph 1, relating to the year 2015, and taking into consideration the attached format.

Datos para el informe anual relacionado con la resolución C-11-08

1. País
 2. Año de pesca
 3. Capturas totales de la flota palangrera (T)
 4. Total de días de pesca en el año de la flota palangrera
 5. Porcentaje de cobertura con observadores del esfuerzo de pesca (considerado como días de pesca)
 6. Total de captura realizada por los buques con observadores a bordo
 7. Composición por especie de las capturas realizadas en buques con observadores a bordo
 8. Número de buques con observadores a bordo
 9. Número de tortugas marinas atrapadas incidentalmente en viajes con observador
 10. Se liberaron al mar las tortugas capturadas incidentalmente ?
 11. Cantidad de tiburones capturados en viajes con observador
 12. Cantidad de manta rayas capturadas en viajes con observador
 13. Cantidad de picudos capturados en viajes con observador
 14. Numero de anzuelos utilizados en los viajes de pesca con observador
 15. Tipo de anzuelos utilizados
-

Information for the annual report related to Resolution C-11-08

1. Country .
2. Fishing year .
3. Total catches of the longline fleet (T)
4. Total fishing days in the year of the longline fleet
5. Percent coverage of fishing effort by observers (considered as fishing days)
6. Total catch by vessels with observers on board
7. Species composition of catches in vessels with observers on board
8. Number of vessels with observers on board
9. Number of sea turtles caught incidentally on trips with observers
10. Sea turtles caught incidentally were released?
11. Number of sharks caught in trips with observers
12. Number of rays captured on trips with observers
13. Number of billfishes captured in trips with observers
14. Number of hooks used on fishing trips with observer
15. Type of hooks used.

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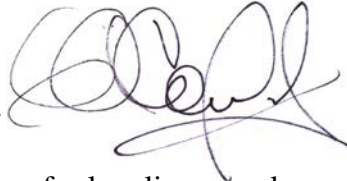
15 February 2013

Ref.: 0065-410

Para: Commissioners

Cc: Bolivia, Cook Islands

De: Guillermo Compeán, Director



Re: Resolution on scientific observers for longline vessels

This is a reminder that Resolution C-11-08 states that “*each Member and cooperating non-Member (CPCs) shall ensure that, from 1 January 2013, at least 5% of the fishing effort made by its longline fishing vessels greater than 20 meters length overall carry a scientific observer.*”

The Resolution also states: “*The Scientific Advisory Committee shall indicate, at its 2012 session, how fishing effort should be determined (sets, fishing days, number of vessels or other alternative options)*”. In this regard, I would point out that one of the recommendations made by the Scientific Committee at its 2012 annual meeting was that “*5% observer coverage on longline vessels, measured by effective days fishing (i.e. excluding transit days), be implemented.*”

Since this recommendation was presented at the 83rd annual meeting of the IATTC and there were no objections to it, the number of effective fishing days (excluding transit days) will be the parameter to determine fishing effort as referred to in Resolution C-11-08.

Standardization of Observer Reports for the EPO Longline Fishery in the EPO

Resolution C-11-08 requires relevant IATTC CPCs to provide observer coverage for 5% of their fishing effort conducted by longline vessels greater than 20m and to submit data in formats established by the SAC. Since the requirement came into effect in 2013, CPCs have submitted annual summary reports from their observer programs in order to, among other things, demonstrate their compliance with a minimum of 5% of representative coverage of the total fishing effort. However, CPCs have reported summaries of their longline observer coverage using a variety of approaches, inconsistent units of effort and the catches or bycatches landed. SAC participants have agreed that standardizing these summary national reports is desirable, and the IATTC staff have produced this document in response.

Reporting units for fishing effort

Of the various units currently used in observer summary reports (number of trips, sets, days, hooks), number of hooks is the best metric for informing scientific investigation, but sometimes it is not available. As an alternative, the SAC previously agreed that “effective days fishing” would be the means of measuring fishing effort under C-11-08 relative to the 5% coverage requirement, and an “effective fishing day” was defined as a day on which a longline set was made. Some annual summary reports refer to days, but it is not clear if they are applying this definition of effective days fishing, total days at sea, or some other metric. Therefore, the first recommendation from the SAC is that all summaries provide the effective days of fishing, consistent with the agreed definition.

The number of hooks is the most useful measure of effort, followed by number of sets. Therefore, even though the measure of percent coverage is determined by effective days fishing, IATTC staff recommend that these metrics are also provided where they are available.

Additionally, given that catches can vary significantly between sets using different hook types and sizes, it is recommended that the predominant hook type and size used is recorded, preferably using codes detailed in the [IATTC Hook Catalog](#).

Many of the observer reports do not report on the predominant gear configuration or type (shallow vs. deep) for observed sets. Since the catch composition differs significantly between shallow and deep sets, such information is crucial in determining whether the observed sets are “*representative of the activities of its fleet*” (Resolution C-11-08). Therefore, it is recommended that the number of sets and number of hooks observed for shallow and deep sets be recorded and reported separately. A shallow set is defined as set either having: i) <15 hooks per basket (float), or ii) the majority of the hooks are set at less than a depth of 150m. All other sets are therefore considered deep sets. There must be at least 5% coverage of each set type.

If data are available for multiple units (e.g. trips and sets), then it would be helpful to have both to facilitate the comparisons.

The total number of vessels from which sets were observed has also been reported in various ways. To gauge the representativeness of the observed sets it is recommended that the observed and total number of vessels be reported.

Reporting units for catches

With respect to catches, they are usually reported as weights for target species, but appear in either numbers or weights for bycatch species. Therefore, it is recommended that numbers be used for future reports for all species, especially bycatch species of sharks, mobulid rays, seabirds, marine mammals, and sea turtles. Pelagic stingrays are not mobulids, and they should not be added to the mobulid figures.

When the reports do not include all observed trips because of delays in processing, the unreported ones should be added as soon as they are available. This table will indicate the number of trips observed and the number reported if they are different.

Table1. Proposed format for use in observer reports for the EPO longline fishery.

Member country or CPC	Country x						
		Shallow sets (<15 HPB or 150m max hook depth)			Deep sets (≥15 HPB or >150m max hook depth)		
Period covered		20 Feb 2018 to 27 April 2018			1 Feb 2018 to 5 April 2018		
		Observed	Total Fleet	%	Observed	Total Fleet	%
No. vessels		5	100	5.0	6	100	6.0
No. effective fishing days ¹		20	100	20.0	40	200	20.0
No. sets		2	20	10.0	2	40	5.0
No. hooks (thousands)		50	1000	5.0	700	10000	7.0
Predominant hook type (IATTC code)		C-30	C-30		C-32	C-30	
Predominant hook size		13/0	12/0		13/0	12/0	
	Non-retained species (in numbers, N)						
Species	Unit	Observed	Total Fleet	%	Observed	Total Fleet	%
Sea turtles	N	1	20	5.0	0	2	0
Marine mammals	N	1	5	20.0	0	0	0
Seabirds	N	12	50	24.0	0	0	0
Sharks	N	3256	22568	14.4	123	2036	6.1
Mobulid rays	N	5	200	2.5	0	0	0
Rays (not Mobulid rays)	N	1	100	1.0	0	0	0
Add rows for species	N						
	Retained species (in numbers (N) or weight in metric tons (MT), or kilograms(kg))						
Species	Unit	Observed	Total Fleet	%	Observed	Total Fleet	%
Bigeye tuna	MT	456	34355	1.2	5654	56756	11.3
Yellowfin tuna	MT	5465	24242	8.6	565	56777	2.5
Albacore tuna	MT	56	4332	5.6	4564	67756	7.8
Billfishes	N	876	6755	7.8	78	6487	6.9
Swordfish	MT	868	7655	6.9	2134	54656	8.0
Sharks	N	4353	85445	8.7	678	34536	5.6
Mahi-mahi	KG	6867	46545	8.9	234	5644	4.1
Add rows for species							

¹ Effective days fishing (excluding transit days) was adopted by the IATTC at its [83rd Meeting](#) as the measure of effort under C-11-08.

Report of the National Observer Programs for pelagic fisheries under the IATTC Convention Area

Observer Program

Reporting CPC

Name of the program

Scientific contact

Email

Year start

Vessel type monitored

Average number of vessels observed per year

Observer Program: Data recorded from interactions with fishing operations

Level data record:

Other:

Frequency record:

Other:

Data recorded please check if the following information is recorded			
	Target species	Non-target commercial spp	Other bycatch spp
Catches estimates (Kg/No)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dead discards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Releases alive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Species identification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Main taxa groups monitor by observers	<input type="radio"/> Yes
Fish target spp	<input type="radio"/>
All fish species (sharks/rays)	<input type="radio"/>
Sea turtles	<input type="radio"/>
Seabirds	<input type="radio"/>
Mammals	<input type="radio"/>
Other taxa (specify)	

Record on condition of discards and reasons for	<input type="radio"/> Yes
Reason(s) for discard of commercial catches	<input type="radio"/>
General state of the discards	<input type="radio"/>

Biological sampling and samples collections	Target spp	Non-target sp	Bycatch
Species identification (photo)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Size and weight measurement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sex and/or fecundity status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hard parts (otoliths, spines)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tissues (muscle, gonads, blood)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tagging (release)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vessel information recorded	<input type="radio"/> Yes
ID, Name	<input type="radio"/>
IMO Number	<input type="radio"/>
LOA, GRT, HP	<input type="radio"/>
Main gear(s) operation	<input type="radio"/>
Electronics (GPS, sonar)	<input type="radio"/>
Home port	<input type="radio"/>

At fishing operation please check if the following information is recorded	<input type="radio"/> Yes	Start operation	End operation
Fishing on FADs or not	<input type="radio"/>		
Gear type	<input type="radio"/>		
Geo-position (lat - lon)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Date/type operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bait type	<input type="radio"/>		
Crew number	<input type="radio"/>		

Environmental data recorded	<input type="radio"/> Yes
Sea surface temperature	<input type="radio"/>
At gear catch sea temperature	<input type="radio"/>
Depth of gear operation	<input type="radio"/>
Wind speed and direction	<input type="radio"/>
Other environmental data	

Observer Program: Qualifications and training

Observer qualifications and training	Before enter observer program	Evaluation during program
Minimum qualifications describe		
Training course	<input type="radio"/>	<input type="radio"/>
Training materials and forms	<input type="radio"/>	<input type="radio"/>
Observer evaluation(s)	<input type="radio"/>	<input type="radio"/>
Validation of data recorded	<input type="radio"/>	<input type="radio"/>
On vessel training / experience	<input type="radio"/>	<input type="radio"/>

Member	Vessel type	Level data record
Belice	Bait boat	By set or fishing operation
Canada	Gillnet	By trip of vessel
China	Hand line	Other (specify next)
Chinese Taipei	Harpoon	
Colombia	Haul sine	
Costa Rica	Longline	
Ecuador	Purse seine	
El Salvador	Rod-and-reel	
European Union	Sport	
France	Tended line	
Guatemala	Trammel net	
Japan	Trap	
Kiribati	Trolling	
Korea	Trawl	
Mexico	Various gears	
Nicaragua	Others	
Panama		
Peru		
Unites States		
Vanuatu		
Venezuela		
Cooperating non- member		
Bolivia		
Chile		
Honduras		
Indonesia		
Liberia		