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STANDARDIZATION OF REPORTING FORMATS AND EFFORT REPORTING FOR
LONGLINE FISHERIES (RESOLUTION C-11-08)

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1. INTRODUCTION

IATTC Resolution [C-11-08](#) mandates a minimum 5% observer coverage of the effort by each CPC’s fleet of longline vessels greater than 20 m length overall (LOA) , and that this coverage be representative of the activities of the fleet. The primary duties of the observers are 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*”. These data, as well as a report summarizing the activities of the observed vessels, are to be reported to the Director by 31 March each year. The observer data are primarily intended for the IATTC scientific staff to produce annual catch estimates of non-target species for the Ecosystem Considerations report and the [Fishery Status Report](#). The summary reports not only enable CPCs to demonstrate compliance with the minimum 5% representative coverage requirement, but the data reported also provide useful fleet and operational statistics.

The 15 data fields that CPCs are currently required to include in their summary reports are:

1. Country (or fishing entity)
2. Fishing year
3. Total catches of the longline fleet, by weight
4. Total fishing days in the year of the longline fleet (subsequently defined as “effective days fishing”)
5. Percent coverage of fishing effort by observers (also to be expressed in “effective days fishing”)
6. Total catch by vessels with observers on board
7. Species composition of catches by 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. Whether caught sea turtles were released
11. Numbers of sharks caught in trips with observers
12. Numbers of rays captured in trips with observers
13. Numbers of billfishes captured in trips with observers

14. Numbers of fishing hooks used in trips with observers
15. Type of hooks used

However, much of this information is not provided, and several key requirements of [C-11-08](#) are not being met: no interactions with seabirds, sea turtles, and marine mammals have been reported, and fundamental operational data, such as number of hooks per basket (HPB), are lacking ([SAC-08-07b](#)). Such deficiencies severely compromise the rigor of the scientific analyses, such as standardizing catch-per-unit-effort (CPUE) and undertaking ecological risk assessments ([SAC-08-07d](#)), required of the staff to meet the objectives of the Antigua Convention.

In addition to these data deficiencies, the summary reports vary in format and in the effort metric used (*e.g.*, fishing days, observed days, fishing operations, percentage of trips) to calculate the percentage of observer coverage ([SAC-09 INF A](#)). In other tuna regional fisheries management organizations (tRFMOs), the metric used to measure longline effort is number of hooks, which is also used for standardizing CPUE in stock assessments of bigeye and yellowfin tunas in all tRFMOs, including the IATTC ([SAR-7-07](#)). This measure is preferred for scientific purposes because its definition is less ambiguous and can be quantified or estimated with considerably more precision than other effort metrics for longline fisheries (*e.g.*, number of trips).

2. STANDARDIZATION OF LONGLINE EFFORT REPORTING

At the third meeting of the Scientific Advisory Committee (SAC-03) in 2012, some CPCs expressed concern that data on number of hooks were not always recorded, and in February 2013 “*effective day’s fishing*” (defined as a day on which a longline set was made, excluding transit days) was adopted as the metric for longline effort. However, it is rarely used ([SAC-09 INF A](#)); for SAC-09, for instance, nine of the ten CPCs included in SAC-09 INF A reported the total number of hooks observed, and the other reported the range of number of hooks per set. It would thus appear that number of hooks, the preferred measure of longline effort that all CPCs can consistently report, is now available for longline vessels for all CPCs.

3. DEFICIENCIES IN DATA REPORTING

After the minimum standards for reporting operational-level observer data were adopted in 2017, CPCs agreed to provide those data for 2013-2017, and for subsequent years. However, only three CPCs have provided data, and most do not cover the entire 2013-2017 period ([SAC-10-04](#)).

At SAC-09, the staff made two recommendations: a single standard template for summary reports, and using number of hooks as the effort metric for longline fishing, but neither was approved. However, on 15 April 2019 the United States made some written comments on the reporting template, which form the basis for the recommendations presented in this document.

Not only do the various formats used by CPCs make it difficult to determine the percentage of observer coverage, many of the summary reports do not report on the predominant gear configuration or type (shallow vs. deep) for observed sets. This is important because catch composition differs significantly between shallow and deep sets, which is relevant to whether the observed effort is “*representative of the activities of [the CPC’s] fleet*” (Resolution [C-11-08](#)). Therefore, the staff recommended ([SAC-09 INF A](#)) that (1) the number of hooks observed in shallow (<15 HPB) and deep (>15 HPB) sets be recorded and reported separately, so that the relative percent observer coverages can be evaluated; and (2) the predominant bait and hook type and size used be recorded, using the codes in the [IATTC Hook Catalog](#).

4. RECOMMENDATIONS

The staff proposes a simpler and more transparent process for longline observer summary reports, based on two recommendations:

Recommendation 1: Use number of hooks as the measure of effort, and calculate the percentage of observer coverage by dividing the total number of hooks for the fleet by the number of observed hooks.

Recommendation 2: Use a standard template for summary reports by CPCs (Appendix 1).

Recommendation 1 would optimize transparency, consistency, and comparability in reporting effort and observer coverage. Other effort metrics (*e.g.*, number of vessels, trips, sets, effective days fishing) may be reported in addition, but the 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.

Recommendation 2 would simplify the task of reporting for CPCs and make the data much more useful for the staff's research. The proposed standard template ([Appendix 1](#)) focuses on fundamental aspects such as observer coverage and catches of discards, by set type; it omits retained species data, which are already reported in detail by CPCs. Only three CPCs have provided operational-level observer data since 2017 (SAC-10-04); it is hoped that simplifying the task will improve compliance with this requirement.

Once all CPCs are submitting complete operational-level observer data in the agreed format ([SAC-08-07e](#)), the template can be further simplified by omitting data on non-retained species.

RECOMMENDATIONS:

Beginning in 2020:

1. Use number of hooks as the measure of effort, and calculate the percentage of observer coverage by dividing the total number of hooks for the fleet by the number of observed hooks.
2. Use a standard template for summary reports by CPCs.

Appendix 1. Template for annual summary reports on fleet information and observer data for longline vessels >20m operating in the EPO, for use from 2020.

Member, or cooperating non-member	Country name
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FLEET INFORMATION (vessels >20m)									
Period covered	All sets types combined			Shallow sets (<15 HPB/HBF ¹ or <100m max hook depth)			Deep sets (≥15 HPB/HBF or ≥100m max hook depth)		
	date range mm/dd/yyyy–mm/dd/yyyy			date range mm/dd/yyyy–mm/dd/yyyy			date range mm/dd/yyyy–mm/dd/yyyy		
Area fished	from (XXX) ^o W to (XXX) ^o W and from (XXX) ^o S/N to (XXX) ^o S/N			from (XXX) ^o W to (XXX) ^o W and from (XXX) ^o S/N to (XXX) ^o S/N			from (XXX) ^o W to (XXX) ^o W and from (XXX) ^o S/N to (XXX) ^o S/N		
	Total Fleet	Observed	% observed	Total Fleet	Observed	% observed	Total Fleet	Observed	% observed
No. of vessels that fished	100	9	9	60	3	5	90	8	8.9
No. of trips	300	19	6.3	150	15	10	300	10	3.3
No. of effective days fishing	4500	260	5.8	3700	238	6.4	800	22	2.8
No. of sets	5000	320	6.4	4000	800	20	1000	25	2.5
No. of hooks (in thousands) <i>If unknown, approx.. no. of hooks/set, using a *</i>	1000	60	6	700	120	17	300	12	4
Predominant ² hook type/size (IATTC code)	C-40	C-40		C-40	J-02		C-33	C-33	
Predominant bait type ³	SQ	SQ		SQ	SQ		M	M	

NON-RETAINED SPECIES (vessels >20m)									
	No. of Individuals Observed								
	All sets types combined			Shallow sets (<15 HPB/HBF ⁴ or <100m max hook depth)			Deep sets (≥15 HPB/HBF or ≥100m max hook depth)		
	Released Alive	Released Dead	Released Condition Unknown	Released Alive	Released Dead	Released Condition Unknown	Released Alive	Released Dead	Released Condition Unknown

¹ Hooks per Basket / Hooks Between Float

² Predominant indicates most common, e.g. >50%

³ Bait code: SQ – squid (e.g. Cephalopods), M – mackerel (e.g. Scomber spp.), A – artificial lure (e.g. plastic jig)

⁴ Hooks per Basket / Hooks Between Float

Taxa - Sea turtles									
leatherback (<i>Dermochelys coriacea</i>)									
loggerhead (<i>Caretta caretta</i>)									
green (<i>Chelonia mydas</i>)									
olive ridley (<i>Lepidochelys olivacea</i>)									
Add more rows for each additional species									
Taxa – Sharks and Rays									
silky (<i>Carcharhinus falciformis</i>)									
oceanic whitetip (<i>Carcharhinus longimanus</i>)									
blue shark (<i>Prionace glauca</i>)									
shortfin mako (<i>Isurus oxyrinchus</i>)									
scalloped hammerhead (<i>Sphyrna lewini</i>)									
smooth hammerhead (<i>Sphyrna zygaena</i>)									
great hammerhead (<i>Sphyrna mokarran</i>)									
giant manta ray (<i>Manta birostris</i>)									
Add more rows for each additional species									
Taxa – Marine Mammals									
false killer whale (<i>Pseudorca crassidens</i>)									
Risso's dolphin (<i>Grampus griseus</i>)									
Guadalupe fur seal (<i>Arctocephalus townsendi</i>)									
Add more rows for each additional species									
Taxa – Seabirds									
Antipodean albatross (<i>Diomedea antipodensis</i>)									
waved albatross (<i>Phoebastria irrorata</i>)									
Laysan albatross (<i>Phoebastria immutabilis</i>)									
short-tailed albatross (<i>Phoebastria albatrus</i>)									
Add more rows for each additional species									
Taxa – Billfish									
striped marlin (<i>Kajikia audax</i>)									
shortbill spearfish (<i>Tetrapturus angustirostris</i>)									
blue marlin (<i>Makaira nigricans</i>)									
Add more rows for each additional species									