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CHARACTERIZING AND CLASSIFYING LONGLINE FISHERIES IN THE IATTC CONVENTION AREA

This document was produced in response to an EBWG-02 recommendation that, "*the staff, in coordination with CPCs, develop and present to the Commission results of a process to characterize and classify the longline fleets and their fisheries in the Convention Area, distinguishing their dynamics and differentiated impacts, as well as the catchability of species, whether directed, associated or incidental*."

CONTENTS

SUMMARY

During the 2nd meeting of the Ecosystem and Bycatch Working Group (EBWG), a recommendation was adopted stating, "*the staff, in coordination with CPCs, develop and present to the Commission results of a process to characterize and classify the longline fleets and their fisheries in the Convention Area, distinguishing their dynamics and differentiated impacts, as well as the catchability of species, whether directed, associated or incidental.*" Consequently, the IATTC staff developed an approach to produce preliminary staff recommendations in coordination with CPCs, for formally classifying and defining longline fisheries that target tunas and tuna-like species and operate in the Antigua Convention Area of the eastern Pacific Ocean (EPO). The process included the following stages:

1) reviewing the existing situation regarding a classification of longline vessels within the IATTC Convention area, in the relevant instruments and processes and in the context of specific issues and activities, such as previous and ongoing projects involving longline fisheries for descriptions and classifications that may be considered in the process of formally classifying these fisheries. These included fleet characteristics for "small-scale coastal ('artisanal') fisheries" identified under the FAO Common Oceans projects entitled "*Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the*

Areas Beyond National Jurisdiction" (i.e., the Common Oceans ABNJ Tuna Projects), Electronic Monitoring Systems (EMS), Ecological Risk Assessments (ERAs), and guidelines for developing Best Handling and Release Practices (BHRPs));

2) preparing a proposal of three preliminary categories and classifications of longline fleets in the Convention area presented by IATTC staff in a draft of this document (herein these are partitioned into "large-scale longline", "medium-scale longline" and "small-scale coastal fisheries") that was shared with CPCs, and through them all other relevant stakeholders, to elicit suggestions for adjustment of the process and/or the preliminary categories (i.e., shared via Memorandum Ref.: 0135-410, dated 02 April 2025);

3) drawing upon the expert feedback in step 2 to refine the staff's classification of the three preliminary categories; and,

4) producing recommendations based on the staff's review and consideration of expert feedback to present to the EBWG, the Scientific Advisory Committee (SAC) and the Commission in 2025.

A new, updated and improved classification is essential for the appropriate development of IATTC documents, research planning, management decisions and measures, and for providing clarity to CPCs, data handlers, scientists, policy makers and all relevant stakeholders.

Results from the process detailed herein include the following classifications of longline fisheries by the staff that were refined in accordance with responses to Memorandum Ref.: 0135-410 (i.e., steps 2 and 3), based on existing information, into three broad categories of longline vessels. It should be noted that, in some cases, national regulations might not recognize all three broad categories proposed herein (e.g., some CPCs recognize large-scale 'industrial' longline and small-scale coastal 'artisanal' fisheries, without an intermediary medium-scale category). These categories were defined according to characteristics including vessel size and design, typical number of hooks deployed per set, target species, fishing areas and fishing technologies, and autonomy of the vessel (i.e., how long the vessel can remain at sea) and are subsequently the recommended categories for the EBWG and SAC to consider (i.e., step 4):

(1) **"Large-scale longline"** (similar to the "distant-water longline fisheries" described in SAC-07-06b(iii)) these vessels are commonly considered to be "industrial" vessels and primarily consist of vessels from distant-water nations, although some coastal States also utilize vessels within this category. In general, these vessels may be defined by the following characteristics:

   a. Length: in general, longline vessels with a registered length >20 m (following Resolution C-19-08); and
   b. Number of hooks deployed: in general, deployment of ≥750 hooks per set; and
   c. Preservation method: vessels generally use a refrigeration system[1] to preserve fish; and
   d. Fishing technology: vessels may use a hydraulic/electric spool for longline setting and hauling; and
   e. Vessel autonomy: trip duration generally continues for >28 days and may extend up to several months; and
   f. Fishing area: due to its characteristics, particularly its autonomy, the vessel can fish very far from the territory of its Flag State or its home port, and at a considerable distance from the coast, primarily in the high seas, beyond the 200 miles Exclusive Economic Zones (EEZs). However, the vessel may also fish within areas under national jurisdiction either of its own flag State or under a license granted unilaterally by another coastal State or in the framework of a fishing agreement; and
   g. Target species: do not vary seasonally and typically consist of tunas, billfishes and certain

[1] any mechanized system for freezing, cooling and maintaining the temperature of the catch. Including, but not limited to, icemakers, refrigerated seawater, flooded brine, spray brine, and blast freezers.

sharks; and

h. Transshipment of catch may occur (see Resolution C-22-03)

(2) **"Medium-scale longline"** (similar to the "longline fisheries of EPO coastal States for large pelagic species" described in SAC-07-06b(iii)), these vessels may generally be considered as "semi-industrial" vessels. In general, these vessels may be defined by the following characteristics:

a. Length: in general, longline vessels with a registered length typically 12–20 m; and
b. Number of hooks deployed: in general, deployment of 500–1800 hooks per set; and
c. Vessel autonomy: trip duration generally lasts <28 days; and
d. Fishing operations: may include "motherships"[2]; and
e. Preservation method: ice is the primary method used to preserve the fish; and
f. Fishing area: vessels can fish offshore at a considerable distance from the coast, including international waters, but mostly operate within EEZs either of their own flag State or under license granted unilaterally by the coastal State or in the framework of a fishing agreement; and
g. Target species: may vary depending on seasonality and market conditions but typically include tunas, billfishes, sharks, dorado, and other large pelagic fishes

(3) **"Small-scale coastal fisheries"** (similar to those defined in SAC-07-06b(iii)), these vessels are often referred to as "artisanal" vessels, used for subsistence or local consumption, although catches may also be exported. In general, these vessels may be best defined by the following characteristics:

a. Length: in general, vessels with a registered length <12 m; and
b. Fishing technology: vessels generally powered by outboard motors; and
c. Fishing operations: multiple gear types may be deployed during a single trip (e.g., longline and gillnet); and
d. Vessel autonomy: short trip durations generally consisting of 1–5 days; and
e. Fishing area: vessels primarily fish within the areas under sovereignty or national jurisdiction of their own flag State or of another EPO coastal State; and
f. Target species: mixed or multi-species fisheries, switching target species from dorado to tuna, billfish and sharks depending on seasonality

1. INTRODUCTION

Difficulties associated with characterizing the longline fishery in the eastern Pacific Ocean (EPO) (e.g., see SAC-08-07b, SAC-08-07d, SAC-07-06b(ii), SAC-07-06b(iii)) have hindered a formal and uniform classification and definition of longline fleet characteristics in IATTC Resolutions (Table 1) and documents. This lack of clarity on longline classifications has thereby impeded progress on data collection and data submission to the IATTC and other management-related matters (e.g., implementation and compliance with different resolutions regarding management and/or research).

Initially, all fishing vessels in the EPO whose catch was reported and recorded by the Commission were classified according to their carrying capacity in short tons (i.e., 1016.05 kg). As described in the IATTC Annual Report for 1953 (p.23): "*Since vessels of different size fish to some extent in different areas, the smaller vessels going to the less distant waters, it is also of value to determine separately the average catch-per-day of tuna fishing for different size classes. Six size-categories of vessels, based on fish capacity, are employed in tabulating these and other data*." The Commission decided to replace the reference to

[2] "Mothership" is defined as a longline fishing vessel that tows up to 10 small-scale coastal ('artisanal') longline vessels (fiber-glass skiffs or pangas) to distant fishing areas, and whose purpose is to fish, supply water, fuel, food, bait and other fishing inputs and in turn store the fish caught by the 'artisanal' fishing vessels in their holds.

short tons with a reference to metric tons (i.e., 1000 kg), as reflected in the Annual Report for 1999 (p.16), which, as in previous such reports, also stressed that the value would be modified according to the effective amounts of the catch landed: "*The owner's or builder's estimates of vessel carrying capacities are used until landing records indicate that revision of these is appropriate. The vessels are grouped by carrying capacity, into the following size classes for reporting purposes: class 1, less than 46 metric tons* (mt); *class 2, 46–91 mt; class 3, 92–181 mt; class 4, 182–272 mt; class 5, 273–363 mt; class 6, more than 363 mt."* It was made clear however, that the detailed records did not include "*most longline vessels*" nor "*sport-fishing vessels and small craft such as canoes and launches*" (Annual Report for 1999, p.16).

Besides reporting, this classification was essentially used for the purpose of determining the applicability to purse-seine vessels to the various conservation and management measures adopted by the Commission (e.g., which vessels must observe a period of closure) or within the framework of their obligations under the AIDCP (e.g., the obligation for class 6 vessels to carry an observer on board).

With regards to longline vessels, they were separated into categories, sometimes overlapping, for different purposes. Currently, there are several such categories, which are as follows, in the chronological order of their establishment:

1. the "*longline fishing vessels larger than 24 m overall length*" or "*LSTLFVs*" must be included in a List or Record to be authorized to engage in fishing activities for tuna and tuna-like species in the Convention area, as stipulated in Resolution C-11-05, which is still in force. [3]
2. the "*longline fishing vessels greater than 20 meters length overall*" must carry a scientific observer on board as prescribed in Resolution C-11-08 amended by Resolution C-19-08.
3. the "*large-scale tuna fishing vessels*" which, for the purposes of Resolution C-12-07 as amended later by Resolution C-22-03 on transshipment "*are defined as all vessels fishing beyond areas of national jurisdiction or beyond each CPC-controlled areas and targeting tuna or tuna-like species*".
4. Resolution C-24-09 on electronic monitoring standards distinguishes longline vessels as "s*mall-sized longline vessels (<20 m LOA*)", "*medium-sized longline vessels (20–24 m LOA)*", and "*large-sized longline vessels (>24 m LOA)*".

It is therefore evident that neither of the two approaches, a classification based on carrying capacity or on only specific functions or purposes of the classification, is satisfactory and responds to the recommendation put forward by the Ecosystem and Bycatch Working Group (EBWG), as quoted above.

In the research for a more satisfactory approach, it is important to consider the following elements. The "large" longline vessels in these Resolutions primarily encompass industrial vessels, most often from distant water nations, that target tunas and billfish in offshore areas a significant distance from the coast (SAC-08-07b). Conversely, for the vessels smaller than 20 m, IATTC Resolutions often simply refer to "artisanal" fisheries, which potentially leads to confusion by IATTC's Members and Cooperating Non-Members (CPCs) regarding to which of their vessels this category pertains. As an example, Resolution C-03-05—mandating data provision of catches and effort for all fisheries—refers to "artisanal" in its paragraph 5b, "*Catch data from artisanal vessels may be reported as total annual catches, without data on fishing effort*" but does not explicitly define "artisanal". As a result, some CPCs do not report data for these vessels (IATTC-102 INF-D). Moreover, documents produced under the FAO Common Oceans program, as part of the *Sustainable Management of Tuna Fisheries and Biodiversity Conservation in Areas Beyond National Jurisdiction* (ABNJ) project, highlighted substantial dynamics of these small-scale coastal or "artisanal" fisheries in the Central American region (SAC-07-06b(ii), SAC-07-06b(iii), Common Oceans ABNJ Tuna Project Phase 1) as well as its expansion into Mexico, Peru and Ecuador (SAC-16 INF-V, SAC-16

[3]Noting, on the Vessel Register, a standardized length definition is lacking and different length types may be reported (e.g., length may be recorded as "Length Overall", "Length Registered", "Length Between Perpendiculars" or "Type of Length Unknown").

INF-W, Common Oceans ABNJ Tuna Project Phase 2), depending not only on a vessel's size but also on where, when and how a vessel fishes. Some of these vessels have the operational capacity to travel far offshore into oceanic waters with "*nodriza*" (mothership) boats that tow "*fibras*" (fiber-glass skiffs or pangas), while independent *fibras* are spatially restricted to fishing in inshore waters (Martínez-Ortiz *et al.* 2015). Additionally, the small-scale coastal ("artisanal") fleet's target species, catch composition and gear change seasonally with dorado as the target species in cooler waters and tunas-billfishes-sharks in warmer waters (Martínez-Ortiz *et al.* 2015), further complicating potential definitions of the "artisanal" fleets.

The need for defining these vessel and fleet characteristics is also important for identifying impacts and mitigation options on species interacting with various fisheries, including in ecological risk assessments (e.g., Ecological Assessment for the Sustainable Impacts of Fisheries (EASI-Fish)) and for developing guidelines on best handling and release practices (BHRPs) required under the IATTC's initial Strategic Science Plan (SSP) and the updated SSP (SAC-16-07). For example, EASI-Fish (Griffiths *et al.* 2019) was developed to identify potentially vulnerable[4] non-target, often data-poor, species by addressing cumulative impacts of all fisheries, including small-scale coastal fisheries operating in the EPO. Because the more "industrial" longline fisheries (i.e., those vessels pertaining to Resolution C-11-05) fish differently than many of the small-scale coastal longline fisheries, BHRPs (e.g., SAC-15-11) may also need to account for varying fishing strategies and vessel characteristics among fleets. These dynamics in fleet characteristics underscore the need for a process to identify and clearly define various fleet dynamics in Resolutions for CPCs to better understand and respond appropriately to IATTC mandates.

A practical starting point may include defining vessel and fleet characteristics to consider in revisions of mandates in Resolution C-03-05 on data provision. In response to a SAC recommendation (SAC-12-16), ongoing efforts have been underway by IATTC staff, in collaboration with CPCs and other relevant stakeholders, to facilitate data improvement workshops and produce recommendations to update Resolution C-03-05 and its corresponding technical specifications (see SAC-12-09, WSDAT-01-01, WSDAT-01-Rpt, SAC-14 INF-Q, IATTC-102-04 Para 4, WSDAT-02, WSDAT-02-RPT, SAC-16 INF-O). Updating this Resolution, adopted over two decades ago, will help to better align data provision with the staff's increase in responsibilities in correspondence with the implementation of the Antigua Convention and IATTC's inaugural and future SSPs (IATTC-93-06a, SAC-16-07). A workshop focused on small-scale coastal fisheries is tentatively planned for 2026, and working in collaboration with CPCs on procedures for characterizing longline fleet characteristics will facilitate improved recommendations on data improvements for these fisheries, and subsequent improvements for updating Resolution C-03-05, among others, regarding these fisheries.

1.1. Objectives

The objective of this document is to respond to an EBWG recommendation for the staff, in collaboration with CPCs, to develop an approach to propose recommendations for formally classifying and defining longline fisheries, which target tunas and operate in the eastern Pacific Ocean (EPO). The approach included a four-step process:

(1) provide background information on IATTC's efforts to date regarding classifying longline fleets;

[4] Unless specified otherwise, including but not limited to citations to vulnerability assessments and any qualitative/quantitative scores (e.g., BYC-10 INF-B; SAC-13-11; SAC-14-12), the staff's definition of "vulnerable species" refers to the species that, in the sensu latu, and due to their low-productive life-history traits (i.e. K species in r/K selection theory), are more susceptible to the impacts of fisheries and other anthropogenic activities on these species or their habitat and ecosystem. This includes the marine mammals, seabirds, sea turtles and the elasmobranchs.

(2) consider results from these efforts to gather these informal, longline classifications into three broad categories: (i.) large-scale longline vessels, (ii.) medium-scale longline vessels and (iii.) small-scale coastal fisheries based on fishing operations (i.e., how, when, where and what these vessels catch);
(3) collaborate with CPCs to obtain feedback on the proposed categories and refine definitions of these broad categories accordingly;
(4) recommend definitions of the three categories to the EBWG, SAC, and the Commission, based on communications between IATTC staff and CPCs.

The recommendations resulting from this work aim to provide guidance to the Commission to formally classify and define longline vessels in, for example, applicable Resolutions and documents involving longline fisheries. For example Resolutions and documents involving data collection and provision (e.g., Resolution C-03-05, SAC-12-09), electronic monitoring (e.g., Resolution C-24-09), BHRPs (e.g., Resolution C-24-05, C-19-04, C-11-02, SAC-15-11), ecological risk assessments that identify potentially vulnerable species to the cumulative impacts of various fisheries operating in the Convention area (e.g., SAC-08-07b, SAC-08-07d, SAC-13-11) and requirements for vessels to carry observers (e.g., Resolution C-19-08), among others, should clearly define the fisheries that are mandated or encouraged to comply with these Resolutions.

2. REVIEW OF FLEET CHARACTERISTICS: COMMON OCEANS ABNJ TUNA PROJECT (PHASE 1)

Fleet characteristics, using information primarily prior to 2015 with some updates as available, were identified for Central American States under a project entitled "*Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction*", commonly referred to as the "Common Oceans ABNJ Tuna I Project." This project defined fisheries that target sharks or catch sharks as bycatch. Descriptions of the fisheries defined in SAC-07-06b(iii) are reproduced here in Table 2. The substantial variability in the characteristics of these fisheries, that include longline fisheries and multi-species and multi-gear fisheries of EPO coastal States, have been previously documented by flag State in a metadata paper (SAC-07-06b(ii)). These are briefly summarized below and in Table 3 and highlight the lack of commonality in category definitions by flag State. The reader should refer to SAC-07-06b(ii) and SAC-08-07-06b(iii) for detailed descriptions on data collection, research, management, challenges and recommendations. The purpose of reiterating these definitions herein is to ensure their consideration when formally characterizing these fleets for providing clarity regarding fisheries referenced in IATTC documents and Resolutions to develop, to the extent possible, comparable classifications by fleets and countries, particularly for improving research, data collection, submission and quality as well as the development and adoption of measures, rules and processes and their implementation .

2.1. Belize

Before 2015, the Belizean flagged longline fleet (which primarily comprises vessels owned by Chinese Taipei companies) operating in the IATTC Convention area has been characterized as a high-seas 'industrial' fleet. Since Belize is not an EPO coastal State, it utilizes landing ports in Panama, El Salvador, and prior to 2020 Costa Rica. Eleven such industrial longline vessels were documented to fish in the EPO in 2014 and reported catches of sharks as both target and bycatch. Size (Length Overall: LOA) of these vessels was not included in the Common Oceans ABNJ Tuna I Project documents, apart from a fluctuation in gross registered tons (GRT) with a minimum of 25 GRT to a maximum of 915 GRT.

2.2. Costa Rica

The Costa Rican vessels included in the Common Oceans ABNJ Tuna I Project, prior to 2015 (current classification may be different), were identified to operate commercially, consisted of longline and other gears, and classified into five categories: small-scale (gillnet and longline vessels), medium-scale (longline

vessels)[5], advanced (longline vessels), semi-industrial (trawl vessels), and facilitated unloading of foreign longline vessels (primarily from Belize, but also from Chinese Taipei, Cambodia, Indonesia, Panama, Georgia, El Salvador and the United States). The small-scale vessels were defined as those that operate within 3 nm of the coast and catch sharks as bycatch. The medium-scale (autonomy <25 days, operating within 40 nm of the coast) and advanced-scale (autonomy >25 days, operating >40 nm from the coast) longline vessels were documented to target large pelagic fishes in the EPO, primarily dorado, sharks, tunas and billfishes (with the main target species changing depending on the season).

Alfaro-Rodríguez (2022) also used similar classifications of commercial fisheries—as defined under fisheries law—in Costa Rica to those described in the Common Oceans ABNJ Tuna I Project but provided additional characteristics, since the their study focused on sharks. Four classifications were defined by fishing area, vessel length, main target species, and main fishing gears. "Small-scale" fisheries were similarly defined by fishing area (up to 3 nm from the coast), and main gear types (gillnet and bottom longline) but also included vessel length (4–14 m) and main target species (demersal and coastal fishes and crustaceans). "Medium-scale" fisheries were defined by fishing area (up to 40 nm from the coast) and main fishing gears (gillnet and bottom and surface longline) with vessel sizes 7–20 m and main target species including demersal, coastal, large pelagic fishes. "Advanced" fisheries were defined by fishing areas (beyond 40 nm from the coast) and main fishing gears (surface and mid-water longline) with vessel sizes 9–28 m and main target species consisting of lar ge pelagic fishes. Lastly, "Semi-industrial" purse-seine fisheries were noted as non-applicable (given the irregular and low-volume catch information available; sardines as the primary target species; vessel lengths 20–22 m) or occurring in national waters (tunas as the primary target species; vessel lengths 57–78 m).

Similarly, after completion of the Common Oceans ABNJ Tuna I Project, Zamora-García et al. (2022) reported three fleet components to the fishery operating within and outside the Pacific EEZ of Costa Rica: "small-scale", "medium-scale" and "advanced-scale". The characteristics of the small-scale category consisted of small vessels, considered artisanal in nature, with outboard motors and limited technology, storage capacity (i.e., fish hold), and autonomy (i.e., daily fishing trips), operating within 3 nm from the shore. Fishing gears for these small vessels included handlines, gillnets, bottom and surface longlines. The medium-scale was considered more advanced than the small-scale fleet component, which consisted of larger vessels with greater autonomy (i.e., <25 days) and greater fish hold capacity. The primary preservation method involved icing or freezing the catch, and gear primarily included surface longlines with or without wire leaders (also called "*chililllo*") and different types of hooks and sizes. This fleet also was reported to use the green stick fishing technique. The advanced, commercial, fleet was reported to be composed of more technologically advanced vessels relative to the small-scale coastal (or artisanal) fleet. Similar to the medium-scale fleet, the catch is stored on ice or frozen and gears also included surface longlines with or without wire, different hook types and sizes, and these vessels also employed the green stick fishing technique. Both the medium and large-scale fleet components target large pelagics (i.e., primarily sharks, tunas, billfishes and dorado).

Recently, Centeno-Chaves et al. (2025) also described the Costa Rican longline fleet—that targets multiple large pelagic species including tunas, swordfish and dorado—based on information from INCOPESCA (n=336 vessels; vessel length range: 7.7–27.9 m with most vessels <16 m). The authors noted the gear used on these vessels typically include surface longlines set at shallow depths (<60 m; Andraka *et al.* 2013) with mainline lengths of 6–70 nm, depending on the size of the vessel, and the number of baited hooks varying from 200 to 2,800 per trip (Pacheco et al., 2020). Centeno-Chaves et al. (2025) also noted gross

[5] Noting in 2024, all medium-scale vessels were re-categorized as advanced-scale vessels (https://www.incopesca.go.cr/acerca_incopesca/transparencia_institucional/datos_abiertos.aspx)

tonnage is typically <42 mt and the average fishing trip lasts approximately 22 days, though large vessels are capable of spending more time at sea, and the preservation method for most of the fleet is ice.

2.3. El Salvador

The catch by Salvadorian vessels was reported as primarily being used for domestic consumption, while some tuna, dorado and shark were exported. The industrial fleet was defined in the Common Oceans ABNJ Tuna I Project as vessels >10 m LOA, noting though this project included trawlers (n=46) targeting shrimp and fish for local markets and purse seiners (n=4), while the longline component of this fleet (n=3 vessels) has remained inactive since 2011. The artisanal vessels (n=8,300) were defined as those <10 m LOA—mostly pangas—that primarily deploy either gillnet or longline gear as well as hand cast nets, handlines, trawl nets and other gears that catch sharks as target and as bycatch. These artisanal vessels may use more than one gear type during a single trip, and they also switch their target species depending on the season.

2.4. Guatemala

Guatemalan vessels have been classified based on their net registered tonnage (NRT) with four categories identified as large-scale commercial (30.1–150 NRT), medium-scale commercial (2–30 NRT), small-scale commercial (1–1.99 NRT), and artisanal (0.46–0.99 NRT). These vessels were categorized as large- and medium-scale shrimp vessels (n=31), large-scale tuna purse seiners (n=3), medium-scale longliners (n=18), small-scale gillnet/longline vessels (n=5) and small-scale artisanal vessels (n=4,680). The artisanal longline fisheries, primarily pangas, other small-scale vessels (that deploy gillnets and/or longlines) and medium-scale industrial longliners were documented to target sharks or teleosts depending on the season, while artisanal gillnet fisheries were documented to catch sharks as bycatch (Ruano et al. 2007, PROBIOMA 2005, Ruiz et al. 2000).

2.5. Nicaragua

Nicaraguan vessels comprised two categories. These were identified as industrial vessels, primarily defined as vessels >15 m LOA, with mechanically operated fishing gear and electronic fish finders and location equipment (n=50), and artisanal vessels, defined as vessels <15 m LOA with fiberglass hulls and outboard motors (n=4,330). These artisanal vessels use a multitude of gears including gillnets, handlines, cast nets and longlines. Both the industrial and the artisanal fisheries primarily target sharks, but depending on the time of year the target species change to other large pelagic species (e.g., dorado and billfishes). Although sharks were recognized as a minor economic importance compared to the shrimp and lobster fisheries.

2.6. Panama

Panamanian vessels have been categorized as “high-seas industrial vessels” that are separated using the net register tonnage (NRT): 1) ≥100 NRT and 2) 10–99 NRT (n=344; 83 longliners and 261 trawl net fishing), coastal artisanal vessels (n=3,554) that are separated as 1) <10 NRT and 2) rowing boats, and international vessels (n=56 longliners and n=26 purse seiners). Tuna and billfish are the primary target species, while sharks are caught as bycatch by these fleets.

3. REVIEW OF FLEET CHARACTERISTICS: COMMON OCEANS ABNJ TUNA PROJECT (PHASE 2)

Under Phase 2 of the Common Oceans ABNJ Tuna Project, the project was extended to Mexico, Ecuador and Peru, and the characterization of fleets from SAC-16 INF-V is reiterated here and in Table 4 to facilitate recommendations for a formal harmonization of fleet classification. As with the Common Oceans ABNJ Tuna Project (Phase 1), considerable variability in classifications of fishing vessels among the three countries was evident. The reader is referred to details in SAC-16 INF-V on domestic and international regulations and management and data sources regarding these fisheries, specifically targeting or catching

sharks as bycatch. Additionally, SAC-16 INF-W provides information on identification and mapping of potential shark landing sites.

3.1. Mexico

Vessels landing elasmobranchs in Mexico were classified by size as small (inshore), medium, or large. However, large vessels, defined as those with steel hulls, range from 27–44 m LOA, have one or more decks and one or more inboard engines, and specifically target sharks no longer operate. Types of gears used are dependent on the target species and permits issued to the vessel. The small (inshore) vessels (n=2,188) were defined as primarily being made of fiberglass, <10.5 m LOA, equipped with outboard motors, have a fishing autonomy of up to three days, a ≤3 t capacity, and typically operate within 18 km of the coast. These small vessels use pelagic longlines, bottom-set longlines or gillnets. In this fleet, fishers did not use preservation methods commonly used in other regions, only a wet blanket to cover the catch. The medium-sized vessels primarily consist of hulls made of steel or fiberglass, from 10–27 m LOA, inboard engine(s), ice as a preservation method, echo-sounder, one deck, have a fishing autonomy of at least 20 days and operate from about 27–37 km from the coast. Both the medium- and large-size vessels fish (or historically fished, in the case of large vessels) with pelagic longlines. Finally, although the large longline vessels are no longer in operation, they were used to fish for sharks and large pelagic species.

3.2. Ecuador

Vessels under the Ecuadorian flag were broadly divided into two groups, 'industrial' and 'artisanal' fleets with industrial vessels further separated into three categories based on their Net Register Tonnage (NRT) as: small-scale (0–≤100), medium-scale (>100–≤500) and large-scale (>500). The industrial fleet (n=609 vessels) comprises the tuna purse-seine fleet, the longline fleet for large pelagic species, the coastal purse-seine fleet for small pelagic fish, the Multipurpose[6] fleet or "polyvalent fleet" for hake and shallow-water shrimp, the hake fleet, the shrimp trawl fleet or "pomadera" (noting this fleet is no longer in operation), the eel fleet, and the longline fleet for small teleost species.

The artisanal fleet (n=7,250 vessels), defined as vessels <18 m LOA, with or without a full deck and without mechanical gear, was also classified into three categories: Class I (<8 m LOA), Class II (<12 m LOA and <15 t of fish per trip) and Class III (<18 m LOA and <30 t of fish per trip) that typically operate more than 8 nm offshore and may use motherships, but in the latter case, artisanal vessels operating on motherships are registered under a different category (supporting the small-scale industrial fleet). The artisanal fleet primarily uses longlines and gillnets and target species include large pelagic species (sharks, tunas, mahi mahi and billfish), small coastal teleost and elasmobranch species and shrimps, many of which are caught seasonally.

Small artisanal vessels are constructed of fiberglass, wood or a combination of materials with an LOA of 4–14 m. These vessels fish independently, i.e., without the assistance of motherships, are restricted to fishing closer to shore as these vessels preserve the catch on ice rather than through a refrigeration system and their trip duration is typically 1–5 days. They lack navigation systems and space for carrying provisions and safety equipment. Fishing gear consists of longlines, gillnets and handlines with gear set at the surface, midwater or on the bottom to target coastal and large pelagic species, shrimp and demersal species.

Motherships tow up to ten small fiberglass boats to offshore fishing areas and back to the landing port. Prior to August 2024, two categories of motherships were recognized, 1) artisanal and 2) small-scale industrial. However, since October 2024, the artisanal mothership fleet was recategorized into the small-scale industrial mothership fleet. Motherships primarily use ice as the catch preservation method, while a few have onboard refrigeration systems. The length of these vessels is typically 20–30 m and the fishing

[6] Multipurpose fleets are those vessels with trawling gear that catch shrimp and hake, but at certain times of the year they change their fishing gear to longline or purse seine nets.

autonomy is up to 40 days. The target species include large pelagic fishes such as tuna, escolar and billfish and sharks are caught incidentally as bycatch. During the fishing season for dorado, trips may last 15–25 days.

The other fleet operating in Ecuador's maritime territory is located in the Galápagos insular region, where, according to the Galápagos National Park (PNG), there are currently around 350 registered vessels, of which 60% are made of fiberglass (categorized as small artisanal vessels). The remaining vessels generally have greater autonomy, with a length of ≤18 m (categorized as artisanal vessels operating with motherships, i.e., "mother artisanal"). All these vessels are dedicated to fishing for large pelagic teleost species, as shark landings are prohibited due to exclusive regulations in Galápagos. The main landing ports in the Galápagos insular region are Baltra, Baquerizo Moreno, Puerto Ayora, and Puerto Villamil.

3.3. Peru

According to the Fisheries Administration of Perú (PRODUCE) the vessels are categorized into two groups (1) artisanal or small-scale fishing vessels and (2) large-scale fishing vessels. The Research administration (IMARPE) classify the artisanal vessels into four types: "zapato" (n=699), (2) "chalana" (n=2,670), (3) "bote" (n=8,852) and (4) "lancha" (n=5,627). These vessels are required to hold a valid fishing permit for landing elasmobranchs and other large pelagic species in Peru. Gear types include longline, purse-seine, gillnet, handline and trawl net. Elasmobranchs are either targeted or caught as bycatch.

4. LONGLINE CLASSIFICATIONS UNDER A PROPOSED SHARK SAMPLING PROGRAM (SAC-15-10)

Most recently, SAC-15-10 on, "*Development of options for a shark data collection program for IATTC fisheries: lessons and opportunities*" presented in 2024, defined two main categories of longline vessels as "industrial longline" and "small-scale coastal," following work by Andraka et al. (2013), Martínez-Ortiz et al. (2015) and the Common Oceans ABNJ Tuna I Projects (e.g., SAC-07-06b(ii), SAC-07-06b(iii), SAC-11-13). These definitions are reiterated here and in Table 5 for consideration in recommendations to propose formal definitions of the longline fisheries in the EPO.

4.1. Industrial longline vessels

"Large-scale tuna longline fishing vessels" (LSTLFVs) are defined in Resolution C-11-05 as longline vessels >24 m LOA and being included on the IATTC LSTLFV Record as being authorized to fish for tuna and tuna-like species. However, some large longline vessels may predominantly target or catch billfish and sharks as opposed to tuna, and as such may not be licensed domestically as tuna vessels. Therefore large longline vessels that generally operate long distances from the coast have been collectively referred to as "Industrial longline vessels" (SAC-15-10).

4.2. Small-scale coastal fisheries

"Small-scale coastal fisheries" were recognized in SAC-15-10 as diverse in size and target species and included fishing areas within the Exclusive Economic Zones (EEZs) of coastal nations as well as oceanic-artisanal fleets that extend beyond EEZs into waters a great distance from the coast. These longline fisheries were further divided into three subcategories based on vessel size and/or range of operation: "artisanal" vessels, "mediana" vessels and "avanzada" vessels (the last two under the category of "Domestic commercial longline vessels").

4.2.1. "Artisanal vessels (pangas)"

The "artisanal vessels" were referred to as "pangas" and defined as outboard-powered vessels generally <12 m LOA.

4.2.2. "Domestic commercial longline vessels"

"Domestic commercial longline vessels" were defined as 'industrial' vessels <20 m LOA for which licenses are typically issued by the respective fishing authority of a coastal nation.

4.2.2.1 "Mediana or medium-range vessels"

The medium-range vessels (called "mediana" vessels) within the category of domestic commercial longline vessels were defined as those operating within 40 nm or more of the coast in some countries and licensed by the respective fishing authority of a coastal nation.

4.2.2.2. "Avanzada or advanced-range vessels"

The advanced-range vessels (called "avanzada" vessels) within the category of domestic commercial longline vessels were defined as those operating from 40–100 nm from the coast and licensed by the respective fishing authority of a coastal nation.

5. LONGLINE CLASSIFICATIONS RELATED TO ELECTRONIC MONITORING SYSTEMS

The IATTC staff recommendations, and associated discussions at workshops, pertaining to the scope of an Electronic Monitoring System (EMS) in the EPO include two categories of longline vessels (1) those ≥12 m in length and (2) motherships of longline vessels < 12 m in length (EMS-02-02, SAC-14 INF-H, SAC-15 INF-Q). Minimum standards for the use of EMS in IATTC fisheries—including longline fisheries—were adopted at the 102nd meeting of the IATTC in 2024 (Resolution C-24-09). This Resolution, although voluntary in nature, includes examples of camera locations aboard three different size categories of longline vessels: "small-sized vessels (<20 m LOA)", to encompass medium- or advanced-range vessels and motherships of longline vessels <12 m LOA (pangas); "medium-sized vessels (20–24 m LOA)", to encompass motherships or advanced-range vessels, and "large-sized vessels (>24 m LOA)", to encompass large-scale tuna longline fishing vessels (Table 1). Note that currently, data derived from EMS is not permitted to be used to satisfy existing IATTC data requirements, including data submission and observer requirements (C-24-09). The IATTC pilot project for testing EMS on longline vessels[7] did not address the feasibility of adding cameras to different sized longline vessels because all four vessels cooperating in the project shared similarity in size (40.5–53.6 m LOA) and fishing operation. Additional efforts are ongoing in the region by, for example, the Nature Conservancy and INCOPESCA, to pilot EM equipment in smaller longline vessels (SFP, 2024).

6. LONGLINE CLASSIFICATIONS UNDER ECOLOGICAL RISK ASSESSMENTS (PSA AND EASI-FISH)

A metadata review on data available for the "industrial longline fishery" in the EPO (SAC-08-07b) and a preliminary ecological risk assessment conducted for this fishery (SAC-08-07d) were presented at the IATTC's 8th meeting of the Scientific Advisory Committee held in 2017. These two documents specifically describe the difficulties with defining the longline fisheries operating in the EPO, based on the work conducted under the Common Oceans ABNJ Tuna I Project (SAC-07-06b(ii)), which identified a variety of vessel sizes, gear configurations, fishing operations, fishing areas and target species. Both documents (SAC-08-07b and SAC-08-07d) focused on longline vessels >20 m LOA—because of two IATTC Resolutions that define sizes of longline vessels (i.e., C-11-05: vessels >24 m LOA and C-19-08: vessels >20 m LOA)—and refer to these vessels as "large-scale tuna longline fishing vessels (LSTLFVs)" to maintain some consistency with definitions and terminology in C-11-05 for large longline vessels. They also acknowledge the importance of the Common Oceans ABNJ Tuna I Project to collect data for the small-sized "artisanal" vessels to enable their inclusion of these important fleets in future ecological risk assessments to assess the cumulative impacts of all longline fisheries in the EPO.

[7] European Union grant agreement under the EMFAF, project number 839795 "IATTC-Electronic Monitoring (EM) of longline vessel activities in the Eastern Pacific Ocean"

7. LONGLINE CLASSIFICATIONS TO REDUCE BYCATCH AND DEVELOP BHRPS

In 2024, the IATTC staff developed a workplan towards the adoption of Best Handling and Release Practices (BHRPs) for vulnerable species groups (sharks, rays, seabirds, sea turtles, marine mammals) in IATTC fisheries (EB-02-03). Additionally, BHRP guidelines for sharks in IATTC fisheries were provided in 2024 (SAC-15-11) and these guidelines were updated in 2025 (SAC-16-10). Although longline fisheries are addressed in the document and include recommendations such as leaving sharks in the water, removing trailing gear and minimizing handling stress to improve post-release survival, the recommendations are different for vessels with high (>1 m) and low (<1 m) height from the water (freeboard). This distinction was included due to the assumption that most fishers in smaller-scale coastal fisheries remove hooks from sharks and other vulnerable species to retain their gear. Consequently, many handling guidelines must focus on how animals are brought onboard for gear removal whereby freeboard dictates the guidance and vessel LOA is not always the most useful predictor for BHRP guidelines. Similar distinctions have also been taken into consideration while developing BHRPs for other vulnerable taxa, such as sea turtles (EB-03-05) or seabirds (EB-03-03). Defining and classifying longline fisheries is therefore important when considering BHRP guidelines as vessel characteristics (e.g., freeboard) and fishing operations dictate the options and type of bycatch mitigation technique(s) and tools applicable to each category of vessels.

8. PROCESS UNDERTAKEN TO PRODUCE RECOMMENDATIONS FOR DEFINING FLEET CHARACTERISTICS

Prior to the 16th meeting of the SAC, IATTC staff reviewed all previous work and available resources that described various longline fleet classifications, components and characteristics for industrial and coastal fleets under, for example, existing Resolutions, the Common Oceans ABNJ Tuna Projects (Phases I and II), the classifications considered regarding EMS (e.g., electronic monitoring pilot projects, workshops, C-24-09), ERA and EASI-Fish vulnerability assessments (SAC-08-07b, SAC-08-07d), as well as the development of BHRP guidelines for the fisheries under the IATTC. All this information was used to consolidate a proposal that was shared with CPCs and through them experts in the field (i.e., Memorandum Ref.: 0135-410), as recommended by the EBWG. The expert feedback received in response to the Memorandum, was included in this document. This process classified the longline fleets into three broad categories defined according to characteristics including vessel size and design, typical number of hooks deployed per set, target species, fishing areas and fishing technologies, and autonomy of the vessel (i.e., how long the vessel can remain at sea): (1) large-scale longline, (2) medium-scale longline, and (3) small-scale coastal fisheries with recommendations on the classifications provided below.

9. RECOMMENDATIONS FOR DEFINING FLEET CHARACTERISTICS

Based on the information presented herein, some broad commonalities in identification of fishing fleets may be deduced for the purposes of classifying and defining these fleets in the IATTC Convention area and in Resolutions and other pertinent documents. As a result, the following recommendations for formally defining longline vessels are proposed by the IATTC staff, after consultation with CPCs via the aforementioned Memorandum, below and in Table 6:

(1) **"Large-scale longline"** (similar to the "distant-water longline fisheries" described in SAC-07-06b(iii)) these vessels are commonly considered to be "industrial" vessels and primarily consist of vessels from distant-water nations, although some coastal States also utilize vessels within this category. In general, these vessels may be defined by the following characteristics:

   a. Length: in general, longline vessels with a registered length >20 m (following Resolution C-19-08); and
   b. Number of hooks deployed: in general, deployment of ≥750 hooks per set; and

c. Preservation method: vessels generally use a refrigeration system[8] to preserve fish; and
d. Fishing technology: vessels may use a hydraulic/electric spool for longline setting and hauling; and
e. Vessel autonomy: trip duration generally continues for >28 days and may extend up to several months; and
g. Fishing area: due to its characteristics, particularly its autonomy, the vessel can fish very far from the territory of its Flag State or its home port, and at a considerable distance from the coast, primarily in the high seas, beyond the 200 miles Exclusive Economic Zones (EEZs). However, the vessel may also fish in the EPO within areas under national jurisdiction of its own flag State or under license granted unilaterally by another coastal State or in the framework of a fishing agreement; and
f. Target species: do not vary seasonally and typically consist of tunas, billfishes and certain sharks; and
g. Transshipment of catch may occur (see Resolution C-22-03)

(2) "**Medium-scale longline**" (similar to the "longline fisheries of EPO coastal States for large pelagic species" described in SAC-07-06b(iii)), these vessels may generally be considered as "semi-industrial" vessels. In general, these vessels may be relatively defined by the following characteristics:

a. Length: in general, longline vessels with a registered length typically 12–20 m; and
b. Number of hooks deployed: in general, deployment of 500–1800 hooks per set; and
c. Vessel autonomy: trip duration generally lasts <28 days; and
d. Fishing operations: may include "motherships"[9]; and
e. Preservation method: typically, ice is the primary method used to preserve the fish; and
f. Fishing area: vessels can fish offshore at a considerable distance from the coast, including in international waters, but mostly operate within EEZs either of their own flag State or under license granted unilaterally by the coastal State or in the framework of a fishing agreement; and
g. Target species: may vary depending on seasonality and market conditions but typically include tunas, billfishes, sharks, dorado, and other large pelagic fishes

(3) **"Small-scale coastal fisheries"** (similar to those defined in SAC-07-06b(iii)) these vessels are often referred to as "artisanal" vessels often used for subsistence or local consumption, although catches may also be exported. In general, these vessels may be best defined by the following characteristics:

a. Length: in general, vessels with a registered length <12 m; and
b. Fishing technology: vessels generally powered by outboard motors; and
c. Fishing operations: multiple gear types may be deployed during a single trip (e.g., longline and gillnet); and
d. Vessel autonomy: short trip durations generally consisting of 1–5 days; and
e. Fishing area: vessels primarily fish within the areas under sovereignty or national jurisdiction of their own flag State or of another EPO coastal State; and
f. Target species: mixed or multi-species fisheries, switching target species from dorado to

[8] any mechanized system for freezing, cooling and maintaining the temperature of the catch. Including, but not limited to, icemakers, refrigerated seawater, flooded brine, spray brine, and blast freezers.
[9] "Mothership" is defined as a longline fishing vessel that tows up to 10 small-scale coastal ('artisanal') longline vessels (fiber-glass skiffs or pangas) to distant fishing areas, and whose purpose is to fish, supply water, fuel, food, bait and other fishing inputs and in turn store the fish caught by the 'artisanal' fishing vessels in their holds.

tuna, billfish and sharks depending on seasonality

It is important that these definitions, if approved by the Commission, are recognized and applied, where appropriate, to IATTC's pertinent Resolutions and official documents to provide clarity to CPCs on which vessels are applicable to specific Resolutions. For example, in the proposed updating of Resolution C-03-05 on Provision of Data, longline vessels will need to be explicitly defined using the approved terminology and definitions. Consequently, existing data gaps for small-scale vessels will ideally be reduced.

It is also important to note that certain Resolutions or Conservation and Management Measures (CMMs) that either have already been adopted (e.g., C-03-05 on data provision) or may be considered for adoption by the Commission in the future (e.g., potential resolutions dedicated to EMS or BHRPs), may also need to be updated and/or adapted to suit the needs of the different categories of vessels, if the categories are formally adopted. For example, due to spatial constraints on small-scale coastal vessels (i.e., category 3 herein), potential CMMs such as those that might involve mandatory observer coverage and/or bycatch mitigation techniques may inherently be expected to have different requirements than those of medium- or large-scale longline vessels. To illustrate, consider a hypothetical resolution that makes observer coverage compulsory for all vessel sizes, but onboard human observers may not be feasible on the small-scale coastal vessels. Therefore, EMS may be considered in place of a human observer, but the number and placement of cameras that may be required on these small vessels are likely to be different from those of the larger vessels. Similarly, certain Bycatch Release Devices specified in BHRPs (e.g., long-handed de-hookers) may not be recommended or required on smaller vessels compared to larger vessels. These types of considerations would need to be addressed in Resolutions that include defined categories of vessels. Adoption of broad categories and classifications of longline vessels will facilitate improvements in, for example, data provision related to C-03-05, development of recommendations for BHRP guidelines, evaluation of EMS on vessels with different characteristics and EASI-Fish assessments as a technical support tool.

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TABLE 1. Relevant Resolutions pertaining to longline (LL) vessels operating within the IATTC Convention area in the eastern Pacific Ocean (EPO). LOA=length overall; EMS=Electronic Monitoring Systems.

Resolution	Application	Definition of LL vessel size
C-03-05	Data provision	All sizes
C-11-05	List of LL vessels >24 m LOA	>24 m LOA
C-15-04	Conservation of mobulid rays	No explicit reference to longline, but excludes "small-scale and artisanal fisheries" defined as "<1.99 net tonnage by the 1969 International Convention on Tonnage Measurement of Ships"
C-18-06	Regional Vessel Register	All sizes
C-19-08	Observers on LL vessels	>20 m LOA
C-24-01	Tuna Conservation in the EPO	>24 m LOA, fishing for yellowfin, bigeye and skipjack tuna
C-24-09	EMS interim standards	Small: <20 m LOA Medium: 20–24 m LOA Large: >24 m LOA

TABLE 2. Definitions of fisheries (a) targeting sharks and (b) catching sharks as bycatch. Table reproduced from descriptions of these fisheries in SAC-07-06b(iii) under the Common Oceans ABNJ Tuna Project Phase 1 that was produced using information prior to 2015. LOA=length overall; EPO=eastern Pacific Ocean.

(a)

Fishery	Definition
Longline fisheries of EPO coastal States for large pelagic species	1. Target large pelagic species (sharks, tunas, billfishes, dorado); 2. Vessels are commonly <20 m LOA; 3. Fishing autonomy <25 days at sea; 4. Lack frozen storage (preservation method is ice); 5. Commonly change target species depending on seasonal availability and market
Multi-species and multi-gear artisanal[1] fisheries of EPO coastal States	1. Small artisanal vessels that target elasmobranchs in coastal areas; 2. Vessels are commonly <15 m LOA; 3. Vessels generally have outboard motors; 4. Highly seasonal fishery that catches juvenile and/or neonate sharks and rays; 5. May use different gear types during a single trip (e.g., longlines, gillnets); 6. Range of trip duration: 1 day (gillnets) to 3 days (longline); 7. Motherships may extend duration to nearly 3 weeks, increasing range to offshore (Martinez et al. 2015)
Distant-water shark longline fisheries	1. Vessels coming from outside the EPO; 2. May operate in Exclusive Economic Zones of EPO coastal States, under license agreements; 3. Catch composition predominately sharks (primarily silky sharks); 4. Use landing ports in Central America; 5. Vessel LOA range of 23–264 m with fish hold volumes of 60–1,938 m^3

[1]Artisanal fisheries are typically small-scale coastal fisheries for subsistence or for local markets, generally using traditional fishing techniques and small vessels (<15 m LOA). For practical reasons, the definition used in SAC-07-06b(iii) is fisheries involving vessels "less than 1.99 net tonnage, as defined by the 1969 international Convention on Tonnage Measurement of Ships" (IATTC Resolution C-15-04)

(b)

Fishery	Definition
Tuna purse-seine fisheries of EPO coastal and distant-water fleets	Sharks taken as bycatch in three set types: tuna associated with dolphins (DEL sets), tuna associated with floating objects (OBJ sets) and unassociated tuna schools (NOA sets)
Tuna-billfish longline fisheries of EPO distant-water fleets	High-seas longline fleets, primarily from Asia that target tuna and billfish; sharks and other large pelagic species are caught as bycatch
Multi-species and multi-gear fisheries of EPO coastal States	Sharks and rays (primarily coastal species) are caught as bycatch in multi-gear small-scale artisanal fisheries targeting a multi-species complex (porgy or snapper, corvina, grouper, shrimp etc.) in coastal waters

TABLE 3. Number and classification of vessels that fish for sharks in the EPO, by flag, category, and gear. T/B: Target/bycatch; LOA: length overall; NRT: net registered tonnage; GN: gillnet; HX: handline; LL: Longline; PS: purse-seine; TX: trawl net. Reproduced from SAC-07-06b(iii), under the Common Oceans ABNJ Tuna Project: Phase 1 in Central America, that used information prior to 2015, to facilitate a process for characterizing longline fleets to provide clarity on terminology in IATTC Resolutions.

Category	Definition	Number	Gear	Date	T/B
Belize					
Industrial	Belize vessels that fish in the EPO	11	LL	2014	T/B
Costa Rica					
Small-scale/artisanal	<3 nautical miles (nm) from coast	6100	GN/LL	2010	B
Medium-scale	Autonomy <25 d, <40 nm from coast	350	LL	2015	T/B
Advanced	Autonomy >25 d, >40 nm from coast	93	LL	2015	B
Semi-industrial	Trawl net fishery	360	TX	2015	B
Foreign	See section 2.2 (noting that this fleet has not landed in over a decade)				
El Salvador					
Industrial	>10 m LOA	3*	LL	2010	T
Artisanal	<10 m LOA	8300	GN/LL	2010	T/B
Guatemala					
Large-scale commercial	30.1-150 NRT	3	PS	2015	B
Medium-scale commercial	2-30 NRT	17		2015	T
Small-scale commercial	1-1.99 NRT	5	LL	2015	T/B
Small-scale artisanal	0.46-0.99 NRT; <10 m LOA, fiberglass hull, outboard motor, autonomy < 4 d	4860	GN/LL	2010	T/B
Nicaragua					
Industrial	>15 m LOA, mechanically operated fishing gear, electronic fish-finding and location equipment	50†	LL/TX	2015	T
Artisanal	<15 m LOA, fiberglass hull, outboard motor	4300	GN/LL	2010	T/B
Panama					
High-seas 1	≥100 NRT	344	83 LL; 261 PS/TX	2015	T/B
High-seas 2	10-99 NRT				
Coastal 1	<10 NRT; limited autonomy	3554	GN/LL/LX	2010	T/B
Coastal 2	Rowed vessels				
International	Panamanian and foreign vessels that fish outside the 200 nm EEZ	82	26 PS/56 LL	2015	T

*Inactive since 2011; †8 of the 50 industrial vessels are <15 m LOA

TABLE 4. Classification of vessels identified under the Common Oceans ABNJ Tuna Project Phase 2 for Mexico, Ecuador and Peru; LOA = length overall; NRT = Net registered tonnage; Number: number of vessels authorized; Gear: registered fishing gear, GN = gillnet, LL = drift longline or bottom set line, PS = purse seine, HAR = harpoon, LP = pole and line, TX = trawl, HX = handline, OTR = other, AG = all gears; Year: year of information verification; T = target catch / B = incidental catch (bycatch). Reproduced from SAC-16 INF-V, to facilitate discussions for developing a process for characterizing longline fleets to provide clarity on terminology in IATTC Resolutions.

Category	Definition	Number[1]	Gear	Year[2]	T/B
Mexico					
small or inshore vessels	Primarily made of fiberglass, LOA ≤10.5m; outboard motors; autonomy of 3 days; 3t capacity; typically operates within 18km from the coast	2,188	GN/LL	2022	T/B
medium-sized vessels	Hulls made of steel or fiberglass; LOA range 10–27m, stationary engines, deck; autonomy of >20 days; refrigeration system; echo-sounder; typically operates 27–37km from the coast	132	LL	2022	T/B
large vessels	steel hulls, LOA range 27–44m; one or more decks; one or more inboard engines; echo-sounder; fishing autonomy >20 days; typically operates about 92km from the coast	6	LL	2021	T
Ecuador					
Artisanal fleet					
small-scale artisanal	Fiberglass ≤14m LOA	7,250	GN/LL/PS/HAR/LP/HX/OTR	2023	B
Industrial fleet					
artisanal with mothership	Longline boat ≤18m LOA	86	LL	2023	B
small-scale industrial	0–≤100 NRT	397	134 LL/15 PS (tuna PS) /248 PS (coastal PS fleet for small pelagics)	2023	B
medium-scale industrial	>100–≤500 NRT	112	9 LL/95 PS (tuna PS) /8 PS (coastal PS fleet for small pelagics)	2023	B
large-scale industrial	>500 NRT	14	14 PS (tuna PS)	2023	B
Peru					
Artisanal[5]	≤ 32.6 m^3 well capacity and ≤ 15 m of LOA, with a predominance of manual labor.	52	PS/AG	2001	B
Zapato[6]	Wooden vessels with no deck; pronounced bow, square, sloping stern, no keel capacity between 0.2 and 1.0t, but typically 0.5t. Rowboats propelled by oars	699	GN/HX	2017	B
Chalana[5]	Wooden vessels, without deck, with reduced dimensions, ≤6 m LOA, with well capacity of 0.2–2.0 t but predominantly 0.5–1.0 t. The stern is square and the bow pointed. Propelled by mid-engine, outboard motor and others by oar.	2,670	GN/HX	2017	B
Bote[5]	Vessels constructed mainly of wood, but also of fiberglass. They vary in size, with total or partial cover, well capacity of 1.0–8.0 t but mostly 2.0–5.0 t. Propelled by a central engine or outboard motor, although in the Piura Region there are also those propelled by sail or both.	8,852	GN/LL/ HX	2017	T/B
Lancha[5]	Vessels constructed mostly of wood, and to a lesser extent of metal, fiberglass and ferrocement. They have a full or partial deck, and a deck bridge. They are mid-engine or outboard powered, with well capacity 5–32 t, but mostly in the 6–20 t range. The design and location of the engine varies according to the gear used.	5,627	PS/TX/ LL/HX	2017	T/B
Small scale[4]	≤ 32.6 m^3 well capacity and ≤15m LOA, inboard engines, deck with refrigeration system (ice); echo-sounder.	89	LL/PS/TX/AG	2001	B
Large scale[4]	> 32.6 m^3 well capacity, inboard engines, deck with refrigeration system; echo-sounder.	8	LL/PS/TX	2001	B

[4] Defined by the year in which the 3 categories were established (Supreme Decree N° 012-2001-PE).

[5] PRODUCE; [6] IMARPE

TABLE 5. Longline fleet classifications defined in SAC-15-10, "*Development of Options for a Shark Data Collection Program for IATTC Fisheries: Lessons and Opportunities.*" NA: not applicable; LOA: length overall; Res: Resolution; m: meters; nm: nautical miles.

Category	Sub-category	Definition	Reference
Industrial longline vessels	NA	Vessels >24 m LOA	"Large-scale tuna longline fishing vessel (LSTLFV)" Res. C-11-05
Small-scale coastal fisheries	Artisanal (pangas)	Vessels <12 m LOA	SAC-07-06b(ii); SAC-11-13
	Mediana (medium range)	Vessels operating within 40 nm of coast	SAC-07-06b(ii); SAC-11-13
	Avanzada (advanced range)	Vessels operating within 40–100 nm of coast	SAC-07-06b(ii); SAC-11-13

TABLE 6. Preliminary recommendations for classifying longline and multi-gear fisheries that target tunas and operate in the eastern Pacific Ocean (EPO) for consideration in IATTC's Resolutions and pertinent documents to define such fisheries. EEZ: Exclusive Economic Zone.

Category	Definition	Comments
Large-scale longline fisheries	1. **Length**: in general, longline vessels with a registered length >20 m (following Resolution C-19-08); and; 2. **Number of hooks deployed:** in general, deployment of ≥750 hooks per set; and 2. **Preservation method**: vessels generally use a refrigeration system[10] to preserve fish; and 3. **Fishing technology:** vessels may use a hydraulic/electric spool for longline setting and hauling; and 4. **Vessel autonomy:** trip duration generally continues for >28 days and may extend up to several months; and 5. **Fishing area:** due to its characteristics, particularly its autonomy, the vessel can fish very far from the territory of its Flag State or its home port, and at a considerable distance from the coast, primarily in the high seas, beyond the 200 miles Exclusive Economic Zones (EEZs). However, the vessel may also fish within areas under national jurisdiction in the EPO under license granted unilaterally by the coastal State or in the framework of a fishing agreement; and 6. **Target species**: do not vary seasonally and typically consist of tunas, billfishes and certain sharks; and 7. **Transshipment** of catch may occur (see Resolution C-22-03)	Similar to "distant-water longline fisheries" definition in SAC-07-06b(iii) and other descriptions in SAC-07-06b(ii); Vessel size similar to sizes referenced in IATTC active Resolutions (C-11-05, C-19-08)
Medium-scale longline fisheries	1. **Length:** in general, longline vessels with a registered length typically 12–20 m and 2. **Number of hooks deployed:** in general, deployment of 500–1800 hooks per set; and 3. **Vessel autonomy:** trip duration generally lasts <28 days; and 4. **Fishing operations:** may include "motherships"[11]; and 5. **Preservation method:** typically, ice may be the primary method used to preserve the fish; and 6. **Fishing area:** vessels can fish offshore at a considerable distance from the coast, including international waters, but mostly operate within EEZs either of their own flag State or under license granted unilaterally by the coastal State or in the framework of a fishing agreement; and 7. **Target species:** may vary depending on seasonality and market conditions but typically include tunas, billfishes, sharks, dorado, and other large pelagic fishes	Similar to "Longline fisheries of EPO coastal States" for large pelagic species in SAC-07-06b(iii) and other descriptions in SAC-07-06b(ii)
Small-scale coastal fisheries	1. **Length**: in general, vessels with a registered length <12 m; and 2. **Fishing technology:** vessels generally powered by outboard motors; and 3. **Fishing operations:** multiple gear types may be deployed during a single trip (e.g., longline and gillnet); and 4. **Vessel autonomy:** short trip durations generally consisting of 1–5 days; and 5. **Fishing area:** vessels primarily fish within the areas under sovereignty or national jurisdiction of their own flag State or of another EPO coastal State; and 6. **Target species:** mixed or multi-species fisheries, switching target species from dorado to tuna, billfish and sharks depending on seasonality	Similar to "multi-species and multi-gear 'artisanal' fisheries of EPO coastal States" defined in SAC-07-06b(iii) and other descriptions in SAC-07-06b(ii)

[10] any mechanized system for freezing, cooling and maintaining the temperature of the catch. Including, but not limited to, icemakers, refrigerated seawater, flooded brine, spray brine, and blast freezers.

[11] "Mothership" is defined as a longline fishing vessel that tows up to 10 small-scale coastal ('artisanal') longline vessels (fiber-glass skiffs or pangas) to distant fishing areas, and whose purpose is to fish, supply water, fuel, food, bait and other fishing inputs and in turn store the fish caught by the 'artisanal' fishing vessels in their holds.