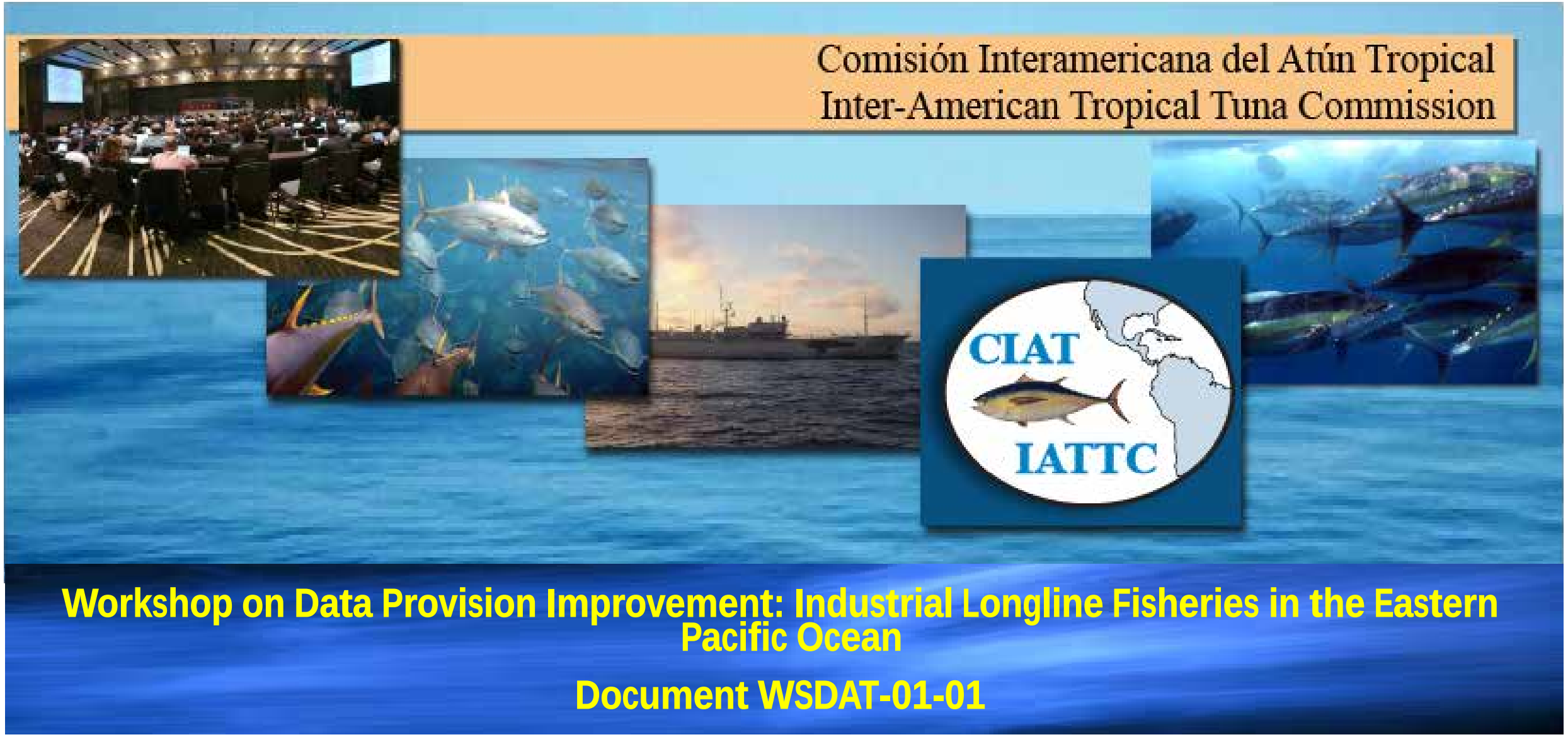


Workshop on Data Provision Improvement: Industrial Longline Fisheries in the Eastern Pacific Ocean

Document WSDAT-01-01

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

Resolution C-03-05

1. Through the appropriate government authorities and in collaboration with those authorities, they take the necessary steps to ensure that all pertinent catch information is provided to the Director on an annual basis, for all of their vessels fishing for species under the purview of the Commission.
2. The data be provided, by species and fishing gear, where practical, via vessel logbooks and unloading records, and otherwise in aggregated form as in the following table, with Level 3 catch and effort data as a minimum requirement, and, whenever possible, Levels 2 and 1 catch and effort data and length-frequency data.

Category	Level	Resolution	Data
Catch and effort	1	Set-by-set, logbook data with information on gear configuration and target species	Total catch in numbers, and weight if available; fishing effort
	2	1°x1°–month, with information on gear configuration and target species	
	3	5°x5°–month, with information on gear configuration and target species	
Length frequency	1	Set position, start or end of set	Length or weight of individual fish
	2	Grid position, best possible spatial-temporal resolution of area of capture	

3. The aggregated data referred to in paragraph 2 for each year shall be provided by 30 June of the following year.
4. The technical aspects of the data to be supplied shall be established by the Director in collaboration with scientists of the members.

5. The following exceptions shall apply to the immediate entry into force of this resolution:
   a. For vessels of less than 24 meters in length overall, the requirements of this resolution shall not enter into force until 1 January 2007. However, each member shall make its best efforts to provide as much data as possible for these vessels.
   b. Catch data from artisanal vessels may be reported as total annual catches, without data on fishing effort.
   c. Catch data from recreational fishing vessels may be reported as total annual catches, without data on fishing effort.
6. The Director communicate with the governments of states not party the Commission whose flag vessels may be fishing in the region, to comply with the terms of this resolution.
7. The Director ensure that the catch information provided to the Commission is maintained in strict accordance with the Commission's confidentiality rules and procedures.

Communicated via the Director's annual Memorandum (e.g., Provision of data and reporting requirements (2022) Ref.: 0123-410, 4 April 2022)

Types of longline data: Memorandum of technical aspects

- Technical aspects of data provision:
  - § supplied in an annual Memorandum corresponding to C-03-05
  - § includes definitions of data & species lists
- TASK I Data
  - § Catch statistics: gross annual removals, i.e., total annual EPO catches, submitted by individual CPCs in summarized form to the IATTC annually
  - § Effort statistics: the number of fishing vessels, by gear, operating in the Antigua Convention Area.
- TASK II Data
  - § Catch and effort data aggregated in space and time
  - § Level 1: Operational-level logbook data
  - § Level 2: 1° x1° – month aggregated data
  - § Level 3: 5° x5° – month aggregated data (at minimum these data are required)

Overview of events leading to this workshop

Stock assessments

2nd Staff meeting to discuss potential extrapolation processes for expanding LL data to fleet totals and options for improving L-W relationships for both target and bycatch species. Analyses of LL observer data and drafting of BYC-10-INF D. Began staff collaboration and drafting of SAC-12-09 (background paper on rationale for revising C-03-05). Industrial LL logbook data deemed important for improving data reporting (tunas and bycatch).

Began preparations for 1st workshop on industrial longline data including collaborations with other RFMOs and drafting of background paper WSDAT-01-01. Opened a new project (F.3.a) on morphometric relationships. Published IATTC Special Report 25 on history of bycatch reporting

2018	2019	2020	2021	2022	2023

1st Staff meeting to discuss bycatch data gaps for gears other than large purse seine & issues with number & weight conversions. Idea to update Resolution C-03-05 to align with new tasks under the Antigua Convention and SSP for target and bycatch species.

BYC-10-INF D shows LL observer data (5% coverage) is not representative of fleet dynamics for most CPCs for BET and YFT.
SAC-12-09 1st presented. SAC endorsed staff recommendation to hold series of workshops by gear type to improve data collection and update C-03-05

1st workshop on improving industrial longline data

Introduction: Assessing the need for improved data

- See SAC-12-09 for background info on reassessing the data on fisheries
  - Ultimate goal to provide rationale for revising Resolution C-03-05 (data provision)
- Antigua Convention has broadened the scope of the staff's research portfolio
  - Improvements in data quality, quantity and reporting rates are essential for the staff to fulfill their increasing workload under the Antigua Convention and IATTC's Strategic Science Plans
- Scientific and political drivers have required the staff's activities to be reassessed, including the data on the fisheries (i.e., Resolution C-03-05)
  - Scientific driver: technical issues with tuna stock assessments (SAC-11-06; SAC-11-07; IATTC-95-05)
  - Political driver: public awareness of potential ecological impacts of tuna fishing
  - Other drivers: advances in science and technology, the increasing number and range of tasks requested of IATTC staff, market and conservation drivers (e.g., fishery certification), and changes in the fisheries (e.g., increase in FAD sets)

Rationale for revising C-03-05: Target species

- Recent challenges with assessing the stock status of target species (Carolina to detail)
- Improved data are needed to:
  - analyze current and historical trends of tuna and tuna-like stocks in the EPO
  - assess shifts in target species and effect of factors related to catchability
  - combine data from different fleets to produce better indices of abundance
  - address similar challenges for other tuna and tuna-like species, such as swordfish (SWO-01)

Rationale for revising C-03-05: Non-target species (bycatch)

- Ecological analyses have been limited to inadequate data-poor methodologies
  - due to poor quality data for bycatch species (e.g., reporting as “sharks”)
- Reporting of bycatch is not mandated
- Challenges in developing reliable tools: minimum requirements
  - an accurate list of species caught (e.g., ERAs)
  - and their disposition (i.e., retained or discarded catches – e.g., ecosystem models)
- Improved data are needed to:
  - identify vulnerable species, prioritize research, reporting and management
  - estimate species-specific catch and discards (noting differences in species composition by gear)
  - report more precise catch locations and presences for bycatch species to improve SDMs
  - separate between deep (BET) and shallow (SWO) sets in EASI-Fish
  - improve gear selectivity ogives using length-frequency data to improve fishing mortality-at-length (or age) estimates

Rationale for revising C-03-05: Biology (morphometrics)

- L-W relationships and conversion factors:
  - vary by region and year; variability can influence both stock and ecological assessments
  - affect catch estimations
  - are outdated (tunas): yellowfin: 1986, bigeye: 1966 and skipjack: 1959
  - remain a data gap (priority species: see SAC-13-11, SAC-09-12)
- Different stocks of the same species may have different relationships
  - Evidence of structure in EPO stocks of tuna species has been shown from tagging studies, meristic and morphometric analyses, and genetic work
  - Spatially-explicit stock assessments should include these differences in relationships if they exist
- Staff initiated new project:
  - Feasibility study on morphometrics and opportunistic biological sampling (F.3.a)
- Length and weight type, units, and conversion methods needed to improve assessments
  - length type (e.g., fork length: fishes, total length: sharks; lower-jaw fork length: billfishes); unit (e.g., cm)
  - weight type (e.g., whole weight, trunk weight); units (e.g., kg)

Motivation: Policy example

- Ecolabeling (e.g., Marine Stewardship Certifications)
  - Several tuna and tuna-like fisheries in the EPO have been granted or are pursuing MSC
  - MSC certification is granted by independent bodies that analyze the fisheries against the MSC standards
  - Good quality fisheries monitoring, estimation of stock status and estimation of impact on bycatch species are central to achieving high scores on the standards
- MSC principles
  - Principle 1: “Sustainable fish stocks” analyzes the target stock
  - Principle 2: “Minimizing environmental impact” analyzes the impact of the fishery on non-target species and the ecosystem
  - Principle 3: “Effective fisheries management” analyzes the governance system
- Improvements in data are needed to accomplish principles such as those identified by MSC

Current gaps in TASK I data

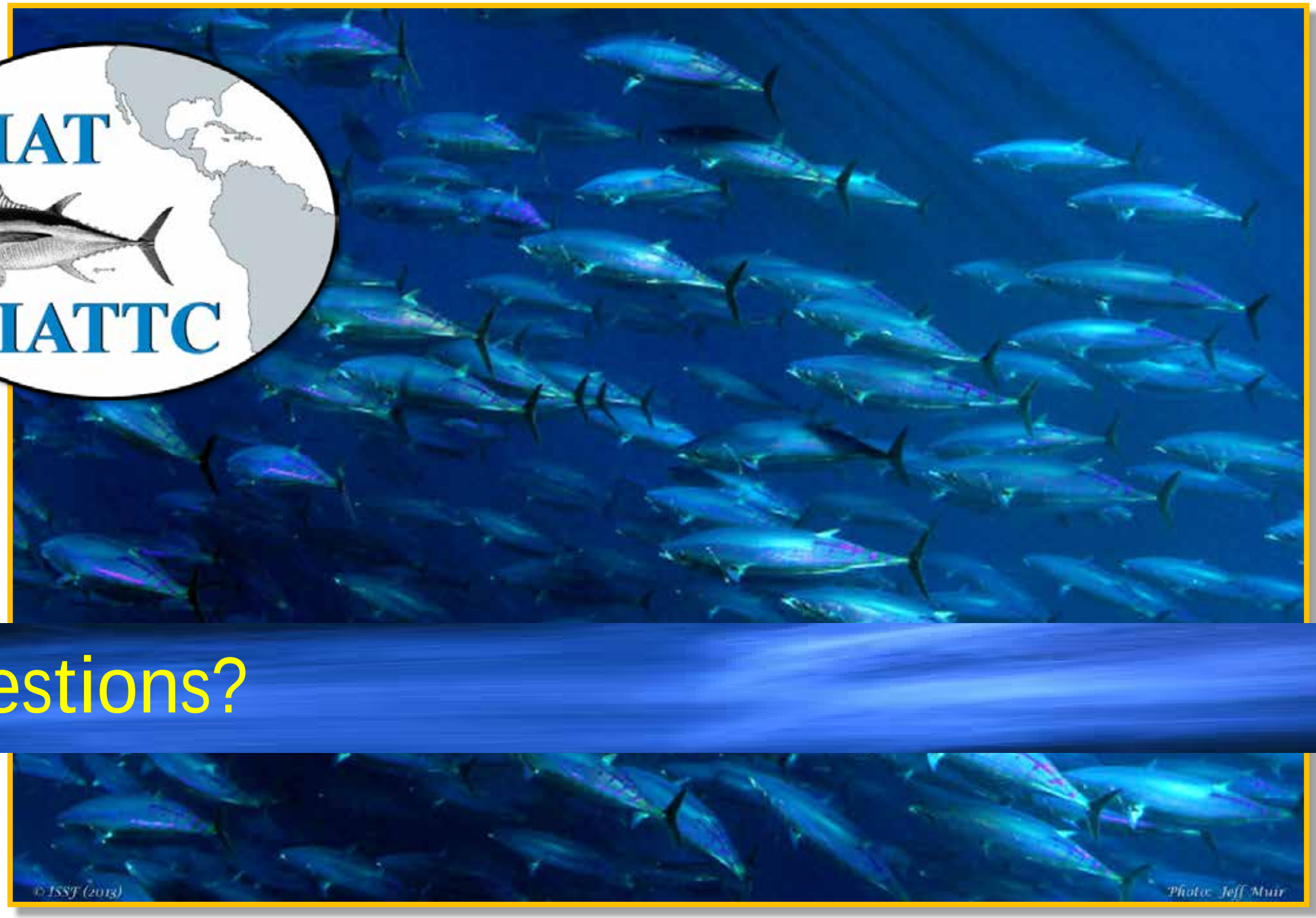
- TASK I:
  - Species-specific catch data are needed for some important species

Current gaps in TASK II data

- TASK II:
  - Catch and effort data submitted as monthly aggregates mostly at 5°x5° resolution
  - No reports of “Level 1” operational-level logbook data with information on gear configuration and target species have been routinely reported
- No information on factors influencing catchability is provided
  - Little to no data on gear configuration and no vessel identifiers provided
- Data submitted are less detailed than for the purse-seine fishery
- A combination of data types are reported
  - Numbers and/or weights of individuals
  - No indication of methods for converting numbers to weights and vice versa
- Option of providing “level 2” (1° x 1°) or “level 3” (5° x 5°) raised or unraised data
  - No indication of whether data were raised
  - No indication of methodology used to raise the data

Longline observer data

- Detailed LL data come from onboard observers – valuable source of information
- But low observer coverage (5%) currently mandated by C-19-08
  - Results in data that are not representative of the spatial and/or temporal dynamics of the fleets for most CPCs (BYC-10 INF-D)
  - Little to no value for estimation of bycatch species
  - Staff have recommended a minimum of 20% observer coverage for the past several years
- EM may resolve many difficulties with data collection (SAC-12-10, SAC-12-11), but is not a panacea
- Logbook data still needed for:
  - providing time-series data – important for stock assessments
  - studying statistical proprieties of the data and elaborating on a monitoring design
  - verifying human observer and EM data
  - evaluating the necessary level of observer coverage
  - complement observer data with logbooks to get representative information for the fishery



Questions?