SCIENTIFIC DATA TO BE PROVIDED TO THE COMMISSION[1]

1. Estimates of annual catches

The following estimates of catches during each calendar year shall be provided to the Commission for each gear type:

- catches of bigeye tuna (*Thunnus obesus*), skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), blue marlin (*Makaira mazara*) and black marlin (*Makaira indica*) in: 1) the WCPFC Statistical Area (see paragraph #8), and 2) the portion of the WCPFC Statistical Area east of the 150° meridian of west longitude;

- catches of albacore (*Thunnus alalunga*), striped marlin (*Tetrapturus audax*), swordfish (*Xiphias gladius*) and Pacific bluefin tuna (*Thunnus orientalis*) in: 1) the Pacific Ocean south of the Equator, 2) the Pacific Ocean north of the Equator, 3) the WCPFC Statistical Area north of the Equator, 4) the WCPFC Statistical Area south of the Equator, and 5) the portion of the WCPFC Statistical Area east of the 150° meridian of west longitude; and

- blue shark, silky shark, oceanic whitetip shark, mako sharks, thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another geographic limit to be appropriate), hammerhead sharks (winghead, scalloped, great, and smooth), and whale shark.

For trollers targeting albacore in the Pacific Ocean south of the Equator, the following catch estimates during the fishing season (July to June) shall also be provided:

- catches of albacore in the Pacific Ocean south of the Equator

Estimates of discards/releases shall also be provided for each species listed above.[2]

Catch estimates shall also be provided for other species as determined by the Commission.

Longline catch estimates shall be for whole weight, rather than processed weight.
All catch estimates shall be reported in metric tonnes.

The statistical methods used to estimate the annual and seasonal catches shall be reported to the Commission, with reference to the coverage rates for each type of data (e.g. operational catch and effort data, records of unloadings, species composition sampling data) that is used to estimate the

[1] As refined and adopted at the Thirteenth Regular Session of the Commission, Denarau, Fiji 5-9 December 2016.
[2] It is also recognized that certain members and cooperating non-members of the Commission may have practical difficulties in compiling discards/releases data for fleets comprised of small vessels, such as certain sectors of the fisheries of Indonesia, the Philippines and small island developing states.

catches and to the conversion factors that are used to convert the processed weight of longline-caught fish to whole weight.

The statistical and sampling methods that are used to derive the size composition data shall be reported to the Commission, including reference to whether sampling was at the level of fishing operation or during unloading, details of the protocol used, and the methods and reasons for any adjustments to the size data. Where feasible, this shall also be applied to all historical data.

2. Number of vessels active

The number of vessels active[3] in the WCPFC Statistical Area during each calendar year shall be provided to the Commission for each gear type.

For longliners, pole-and-line vessels, and purse seiners, the number of vessels active shall be provided by gross registered tonnage (GRT) class. The GRT classes are defined as follows:

- Longline: 0–50, 51–200, 201–500, 500+
- Pole-and-line: 0–50, 51–150, 150+
- Purse seine: 0–500, 501–1000, 1001–1500, 1500+

For trollers targeting albacore, the number of vessels active during each calendar year shall be provided for 1) the WCPFC Statistical Area south of the Equator and 2) the WCPFC Statistical Area north of the Equator. For trollers targeting albacore in the Pacific Ocean south of the Equator, the number of vessels active during the fishing season (July to June) shall be provided for 1) the WCPFC Statistical Area south of the Equator and 2) the Pacific Ocean south of the Equator.

3. Operational level catch and effort data

Operational level catch and effort data (e.g. individual sets by longliners and purse seiners, and individual days fished by pole-and-line vessels and trollers) shall be provided to the Commission, in accordance with the standards adopted by Commission at its Second Regular Session. These are listed in Annex 1.

It is recognized that certain members and cooperating non-members of the Commission may be subject to domestic legal constraints, such that they may not be able to provide operational data to the Commission until such constraints are overcome. Until such constraints are overcome, aggregated catch and effort data and size composition data, as described in (4) and (5) below, shall be provided.

It is also recognized that certain members and cooperating non-members of the Commission may have practical difficulties in compiling operational data for fleets comprised of small vessels, such as certain sectors of the fisheries of Indonesia, the Philippines and small island developing states.

[3] A vessel is considered to be "active" if it fished (targeting highly migratory fish stocks) at least one day during the year.

Information on operational changes in the fishery that are not an attribute in the data provided is to be listed and reported with the data provision.

4. Catch and effort data aggregated by time period and geographic area

If the coverage rate of the operational catch and effort data that are provided to the Commission is less than 100%, then catch and effort data aggregated by time period and geographic area that have been raised to represent the total catch and effort shall be provided. Longline catch and effort data shall be aggregated by periods of month and areas of 5° longitude and 5° latitude. Purse-seine and ringnet catch and effort data shall be aggregated by periods of month, areas of 1° longitude and 1° latitude, and type of school association. Catch and effort data for other surface fisheries targeting tuna shall be aggregated by periods of month and areas of 1° longitude and 1° latitude.

If the coverage rate of the operational catch and effort data that are provided to the Commission is less than 100%, then unraised longline catch and effort data stratified by the number of hooks between floats and the finest possible resolution of time period and geographic area shall also be provided.

If the coverage rate of the operational catch and effort data that are provided to the Commission is less than 100%, then catch and effort data that have been raised to represent the total catch and effort shall also be aggregated by periods of year and areas of national jurisdiction and high seas within the WCPFC Statistical Area.

Catch and effort data aggregated by periods of month and areas of 5° longitude and 5° latitude that have been raised to represent the total catch and effort, and unraised longline catch and effort data stratified by the number of hooks between floats and the finest possible resolution of time period and geographic area, covering distant-water longliners may also be provided for the Pacific Ocean east of the eastern boundary of the WCPFC Statistical Area.

The statistical methods that are used to derive the aggregated catch and effort data shall be reported to the Commission, with reference to the coverage rates of the operational catch and effort data, and the types of data and method used to raise the catch and effort data.

CCMs are to provide, to the extent possible, the number of individual vessels per stratum and area covered by their operational data with the aggregated catch and effort data they submit to the Commission

Information on operational changes in the fishery that are not an attribute in the data provided is to be listed and reported with the data provision.

5. Size composition data

Length and/or weight composition data that are representative of catches by the fisheries shall be provided to the Commission at the finest possible resolution of time period and geographic area and at least as fine as periods of quarter and areas of 20° longitude and 10° latitude.

The length size class intervals are defined as follows:

- Skipjack tuna – 1cm
- Albacore tuna – 1cm
- Yellowfin tuna – ideally 1cm, but not more than 2 cm
- Bigeye tuna – ideally 1cm, but not more than 2 cm
- Billfish – ideally 1cm, but not more than 5 cm

The weight size class intervals are defined as follows:

- Tuna and Billfish species - 1kg

CCMs shall indicate whether lengths and/or weights are rounded up or rounded down to the unit specified.

The statistical and sampling methods that are used to derive the size composition data shall be reported to the Commission, including reference to whether sampling was at the level of fishing operation or during unloading, details of the protocol used, and the methods and reasons for any adjustments to the size data. Where feasible, this shall also be applied to all historical data.

Information on operational changes in the fishery that are not an attribute in the data provided is to be listed and reported with the data provision.

6. The roles of flag states and coastal states

Flag CCMs shall be responsible for providing to the Commission scientific data covering vessels they have flagged, except for vessels operating under joint-venture or charter arrangements with another state such that the vessels operate, for all intents and purposes, as local vessels of the other state, in which case the other state shall be responsible for the provision of data to the Commission.

It is recognized that the ability of flag States or entities to provide scientific data to the Commission may be constrained by the terms of bilateral or regional arrangements, such as the Treaty on Fisheries Between the Governments of Certain Pacific Island States and the Government of the United States of America.

Scientific data compiled by coastal states shall also be provided to the Commission.

7. Time periods covered and schedule for the provision of data

Estimates of annual or seasonal catches should be provided to the Commission from 1950 onwards or, if the fleet began operating after 1950, from the year in which the fleet began operating.

Operational catch and effort data, and size composition data, should be provided for all years, starting with the first year for which the data are available.

For all gear types, except trollers targeting albacore in the Pacific Ocean south of the Equator, estimates of annual catches, the number of vessels active, catch and effort data, and size composition data, covering a calendar year shall be provided by April 30 of the year following the calendar year (e.g. data covering calendar year "x" shall be provided by 30 April of year "x+1").

For trollers targeting albacore in the Pacific Ocean south of the Equator, estimates of annual catches, the number of vessels active, catch and effort data, and size composition data, covering a fishing season (July to June) shall be provided by April 30 of the year following the year in which the season ends (e.g. data covering the season from July of year "x" to June of year "x+1" shall be provided by 30 April of year "x+2").

Estimates of annual catches, the number of vessels active, catch and effort data, and size composition data should be revised, and the revisions provided to the Commission, as additional data become available.

8. Definition of the WCPFC Statistical Area

The WCPFC Statistical Area is defined as follows: from the south coast of Australia due south along the 141° meridian of east longitude to its intersection with the 55° parallel of south latitude; thence, due east along the 55° parallel of south latitude to its intersection with the 150° meridian of east longitude; thence, due south along the 150° meridian of east longitude to its intersection with the 60° parallel of south latitude; thence, due east along the 60° parallel of south latitude to its intersection with the 130° meridian of west longitude; thence, due north along the 130° meridian of west longitude to its intersection with the 4° parallel of south latitude; thence, due west along the 4° parallel of south latitude to its intersection with the 150° meridian of west longitude; thence, due north along the 150° meridian of west longitude; and from the north coast of Australia due north along the 129° meridian of east longitude to its intersection with the 8° parallel of south latitude, thence due west along the 8° parallel of south latitude to the Indonesian archipelago; and from the Indonesian peninsula due east along the 2°30′ parallel of north latitude to the Malaysian peninsula.

9. Periodic reviews of the requirements for scientific data

The Commission, through its Scientific Committee, shall periodically review the requirements for scientific data and shall provide the Commission with revised versions of this recommendation, as appropriate.

Attachment K, Annex 1. Standards for the Provision of Operational Level Catch and Effort Data

1. Data items that shall be reported to the Commission

1.1 Vessel identifiers, for all gear types

Name of the vessel, country of registration, registration number, and international radio call sign: The registration number is the number assigned to the vessel by the state that has flagged the vessel. A code may be used as a vessel identifier instead of the name of the vessel, registration number and call sign for vessels that have fished and that intend to fish only in the waters of national jurisdiction of the State that has flagged the vessel.

1.2 Trip information, for all gear types

The start of a trip is defined to occur when a vessel (a) leaves port after unloading part or all of the catch to transit to a fishing area or (b) recommences fishing operations or transits to a fishing area after transshipping part or all of the catch at sea (when this occurs in accordance with the terms and conditions of article 4 of Annex III of the Convention, subject to specific exemptions as per article 29 of the Convention).

Port or place of departure, date of departure, port or place of unloading, date of arrival in port: If the start of a trip coincides with recommencing fishing operations or transiting to a fishing area after transshipping part or all of the catch at sea, then "Transshipment at sea" shall be reported in lieu of the port of departure, and if the end of a trip coincides with transshipping part or all of the catch at sea, then "Transshipment at sea" shall be reported in lieu of the port of unloading.

1.3 Information on operations by longliners

Activity: This item shall be reported for each set and should be reported for days on which no sets were made, from the start of the trip to the end of the trip. Activities should include "a set"; "no fishing — in transit"; "no fishing — gear breakdown"; "no fishing — bad weather"; and "no fishing — in port".

Date of start of set and time of start of set: The date and start of set time should be GMT/UTC. If no sets are made, the date and main activity should be reported. CCMs shall provide information on how their vessels report time zone/format.

Position of start of set: The position of start of set should be reported in units of at least minutes of latitude and longitude. If no sets are made for the day, the noon position should be reported.

Number of hooks per set

Number of branch lines between floats. The number of branch lines between floats shall be reported for each set.

Number of fish caught per set, for the following species: albacore (*Thunnus alalunga*), bigeye (*Thunnus obesus*), skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*), striped marlin (*Tetrapturus audax*), blue marlin (*Makaira mazara*), black marlin (*Makaira indica*) and swordfish (*Xiphias gladius*), blue shark, silky shark, oceanic whitetip shark, mako sharks, thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another

geographic limit to be appropriate), hammerhead sharks (winghead, scalloped, great, and smooth), whale shark, and other species as determined by the Commission.

If the total weight or average weight of fish caught per set has been recorded, then the total weight or average weight of fish caught per set, by species, shall also be reported. If the total weight or average weight of fish caught per set has not been recorded, then the total weight or average weight of fish caught per set, by species, should be estimated and the estimates reported. The total weight or average weight shall refer to whole weights, rather than processed weights.

1.4 Information on operations by pole-and-line vessels and related gear types

Activity: This item shall be reported for each day, from the start of the trip to the end of the trip. Activities should include "a day fishing or searching with bait onboard"; "no fishing — collecting bait"; "no fishing — in transit"; "no fishing — gear breakdown"; "no fishing — bad weather"; and "no fishing — in port".

Date: The date should be GMT/UTC.

Noon position: The noon position should be reported in units of at least minutes of latitude and longitude.

Weight of fish caught per day, for the following species: albacore, bigeye, skipjack, yellowfin, blue shark, silky shark, oceanic whitetip shark, mako sharks, thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another geographic limit to be appropriate), hammerhead sharks (winghead, scalloped, great, and smooth), whale shark, and other species as determined by the Commission.

1.5 Information on operations by purse seiners and related gear types

Activity: This item shall be reported for each set and for days on which no sets were made, from the start of the trip to the end of the trip. Activities should include "a set"; "a day searched, but no sets made"; "no fishing — in transit[4]"; "no fishing — gear breakdown"; "no fishing — bad weather"; and "no fishing — in port".

Date of start of set, time of start of set and time of end of set: The date and time of the start of set and the time of end of set should be GMT/UTC. If no sets are made, the date and main activity should be reported.

[4] The current definition for a purse seine day in transit ('a day in transit') should only cover the following cases:

- Transiting from port to the tropical WCPFC area (10°N - 10°S); or
- Transiting back to port; or
- Transiting from one fishing zone to another in the Convention Area.

Where vessels are transiting as described above, the conditions of transit are that the gear is stowed, with the boom lowered and tied down, and the net covered."**

Footnote: **Subject to any further clarification.

Position of set or noon position: If a set is made, then the position of the set shall be reported. If searching occurs, but no sets are made, then the noon position shall be reported. The position should be reported in units of at least minutes of latitude and longitude.

School association: All common types of school association shall be reported, while uncommon types of associations shall be reported as "other", including other explanation as appropriate. Common types of school association are "free-swimming" or "unassociated"; "feeding on baitfish"; "drifting log, debris or dead animal"; "drifting raft, FAD or payao"; "anchored raft, FAD or payao"; "live whale"; and "live whale shark".

Weight of fish caught per set, for the following species: albacore, bigeye, skipjack, yellowfin, blue shark, silky shark, oceanic whitetip shark, mako sharks, thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another geographic limit to be appropriate), hammerhead sharks (winghead, scalloped, great, and smooth), whale shark, and other species as determined by the Commission.

1.6 Information on operations by trollers and related gear types

Activity: This item shall be reported for each day, from the start of the trip to the end of the trip. Activities should include "a day fished"; "no fishing — in transit"; "no fishing — gear breakdown"; "no fishing — bad weather"; and "no fishing — in port".

Date: The date should be GMT/UTC.

Noon position: The noon position should be reported in units of at least minutes of latitude and longitude.

Number of fish caught per day, for the following species: albacore, bigeye, skipjack, yellowfin, blue shark, silky shark, oceanic whitetip shark, mako sharks, thresher sharks, porbeagle shark (south of 20°S, until biological data shows this or another geographic limit to be appropriate), hammerhead sharks (winghead, scalloped, great, and smooth), whale shark, and other species as determined by the Commission.

If the total weight or average weight of fish caught per day has been recorded, then the total weight or average weight of fish caught per day, by species, shall also be reported. If the total weight or average weight of fish caught per day has not been recorded, then the total weight or average weight of fish caught per day, by species, should be estimated and the estimates reported. The total weight or average weight shall refer to whole weights, rather than processed weights.

2. Geographic area to be covered by operational catch and effort data to be provided to the Commission

The geographic area to be covered by operational catch and effort data to be provided to the Commission shall be the WCPFC Statistical Area, except for fisheries targeting albacore in the Pacific Ocean south of the Equator, for which the geographic area should be the Pacific Ocean south of the Equator.

3. Target coverage rate for operational catch and effort data to be provided to the Commission

The target coverage rate for operational catch and effort data to be provided to the Commission is 100%.

4. Procedures for the verification of operational catch and effort data

Operational catch and effort data should be verified as follows:

a) The amount of the retained catch should be verified with records of unloading obtained from a source other than the crew or owner or operator of the fishing vessel, such as an agent of the company responsible for unloading or onward shipping or purchasing of the catch.

b) Positions of latitude and longitude should be verified with information obtained from vessel monitoring systems.

c) The species composition of the catch should be verified with sampling conducted by observers during fishing operations or by port samplers during unloading.
