CMM 02-2018

Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data

(Supersedes CMM 02-2017)

With regard to the fishing vessels flying their flag and fishing for non-highly migratory fishery resources in the Convention Area,

1. Data on fishing activities and the impacts of fishing

Members and Cooperating non-Contracting Parties (Members and CNCPs) are to develop, implement and improve systems to:

a) ensure that for each calendar year, Members and CNCPs collate annual catch totals raised to "live" weight for all species/species groups caught during that year, and that these are collated as described in Annex 13. Members and CNCPs will provide by the 30 September, their previous year's (January to December) annual catch totals raised to "live" weight for all species/ species groups caught;

b) ensure that data on fishing activities are collected from vessels according to the operational characteristics of each fishing method;

   i. for trawling methods, Members and CNCPs are to collect the data described in Annex 1;

   ii. for purse seining methods, Members and CNCPs are to collect the data described in Annex 2;

   iii. for bottom long lining methods, Members and CNCPs are to collect the data described in Annex 3;

   iv. for squid jigging, Members and CNCPs are to collect the data described in Annex 4;

   v. for potting methods, Members and CNCPs are to collect the data described in Annex 5;

   vi. for drop/dahn lining methods, Members and CNCPs are to collect the data described in Annex 6.

c) ensure that data to assess the impacts of fishing on non-target and associated or dependent species are collected from vessels;

d) ensure that data on landings and transhipment are collected from vessels according to Annexes 11 and 12 respectively;

e) compile data on fishing activities and the impacts of fishing and provide these in a timely manner to the Secretariat of the South Pacific Regional Fisheries Management Organisation (SPRFMO) using the SPRFMO data submission templates. The data under this subparagraph will be used for the assessment and monitoring of stocks. Members and CNCPs will provide by the 30th June, their previous (January to December) year's data on fishing activities and the impacts of fishing described in sections 1b) – 1d) above.

2. Observer Data

a) Implementation of observer programmes

Members and CNCPs are to develop, implement and improve observer programmes to attain the following objectives:

i. To collect vessel information, effort and catch data for all fisheries and fished species in the Convention Area, including target, by-catch and associated and dependent species;

ii. To collect biological or other data and information relevant to the management of fishery resources in the Convention Area, as specified in these standards, or as identified from time to time by the Scientific Committee or through processes identified by the Commission;

iii. To collect relevant scientific information related to the implementation of the provisions of the Conservation and Management Measures (CMMs) adopted by the Commission;

iv. To collect representative data, including length-frequency and biological samples, across the Convention Area, distribution of fishing effort, seasons, fishing fleets and fleet types.

b) Information and Data to be Collected

All national observer programmes operating in the Convention Area should provide the information in Annex 7 (Parts A to N). Observer information on SPRFMO managed species collected from landings, or from vessels while they are in port, may be collected and provided on a voluntary basis, by referring to part O of Annex 7.

c) Data Provision

Observer data should be provided to the Secretariat of the SPRFMO in a standardised format, to be included in a SPRFMO Observer Database. Specifications and standards for observer data submissions are on the SPRFMO website. Until the Secretariat determines a change is needed, observer data will be submitted in Microsoft Excel format. Members and CNCPs will provide by 30 September, their previous (January to December) year's data.

d) Annual Reporting

All SPRFMO Members and CNCPs should provide annual observer implementation reports, which should include sections covering: observer training, programme design and coverage, type of data collected, and any problems encountered during the year. These reports shall be adequate enough to allow the Compliance and Technical Committee, the Scientific Committee or the Commission to evaluate the implementation and effectiveness of observer programmes implemented under this standard.

e) Maintenance of Confidentiality

The Secretariat of the SPRFMO is to compile and disseminate accurate and complete observer data to ensure that the best scientific evidence is available, while maintaining confidentiality where appropriate. In doing so, the Secretariat is to follow the procedures specified in Section 6.

3. Historical data

Members and CNCPs are to:

a) collate pre-2007 data on fishing activities in the Convention Area and provide these to the Secretariat of the SPRFMO by 30 September 2007, in sufficient detail to facilitate effective stock assessment and in a format as close as is practical to that described in Annexes 1 - 6;

b) because of the value of such data for stock assessments - at their discretion collate pre-2007 data on fishing activities by vessels flying their flag and fishing within areas under their national jurisdiction, and provide these to the Secretariat of the SPRFMO by 30 September 2007 in sufficient detail to facilitate effective stock assessment and in a format as close as is practical to that described in Annexes 1 – 6;

c) collate pre-2008 vessel data and provide these to the Secretariat of the SPRFMO by 30 September 2007.

4. Data verification

Members and CNCPs are to ensure that fishery data are verified through an appropriate system. Members and CNCPs are to develop, implement and improve mechanisms for verifying data, such as:

a) position verification through vessel monitoring systems;

b) scientific observer programmes to collect verification data on catch, effort, catch composition (target and non-target), discards and other details of fishing operations;

c) vessel trip, landing and transhipment reports; and

d) port sampling.

5. Data exchange

Members and CNCPs are to report all data required by this measure to the Secretariat in accordance with the specifications and format described in Annex 8 of this measure, using the templates created by the Secretariat and stored on the SPRFMO website.

6. Maintenance of confidentiality

The Secretariat of the SPRFMO is to compile and disseminate accurate and complete statistical data to ensure that the best scientific evidence is available while maintaining confidentiality where appropriate. Specifically, the Secretariat is to:

a) compile and disseminate the following “public domain” data:

   i. data on fishing activities, aggregated by flag state and month and 1 degree by 1 degree areas, except in those cases where such data describes the activities of less than 3 vessels (in which case a lower resolution will be used);

   ii. data for vessels authorised by Members and CNCPs shall include current flag, name, registration number, international radio call sign, IHS-Fairplay (IMO) number, previous names, port of registry, previous flag, type of vessel, types of fishing methods, when built, where built, length, length type, moulded depth, beam, gross tonnage (and/ or gross register tonnage), power of main engine(s), hold capacity, vessel authorisation start and end dates;

   iii. the occurrence of bottom fishing within a 20 minute block (without specifying flag, any vessel identification, or measure of fishing effort).

b) operate comprehensive and robust processes to maintain the confidentiality of the non-public domain data that Members and CNCPs provide to it. These processes will be based on the ISO/IEC27002:2005 (updates ISO/IEC 17799:2005) international standard for information security management1. SPRFMO specific data security standards will be developed over time;

c) compile and disseminate to Members and CNCPs or their designates non-public domain data

[1] https://www.iso.org/standard/50297.html

(being any data not described in 6(a)):

i. In response to a written request from Commission, for the purposes documented by the Commission; and

ii. In the absence of a written request from the Commission - only with the authorisation of the Participant(s) that originally provided that data.

These standards will be reviewed periodically to ensure that they are adequate for the current and foreseeable needs of the SPRFMO.

7. This measure replaces CMM 02-2017 (Data standards).

ANNEX 1

Standard for trawl fishing activity data

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (tow by tow) basis.

2. The following fields of data are to be collected:

   a) Vessel flag

   b) Vessel name

   c) Vessel call sign

   d) Registration number of vessel

   e) Tow start date and time (UTC format)

   f) Tow end date and time (UTC format)

   g) Tow start position (1/10th degree resolution- decimal format)

   h) Tow end position (1/10th degree resolution – decimal format)

   i) Intended target species (FAO species code)

   j) Type of trawl, bottom or mid-water (use appropriate bottom or midwater trawl codes from the standard ISCCFG fishing gear standards attached at Annex 9)

   k) Type of trawl: single, double or triple (S, D or T).

   l) Height of net opening

   m) Width of net opening

   n) Gear depth at start of fishing

   o) Bottom depth at start of fishing

   p) Estimated catch retained on board by species (FAO species code) in live weight

   q) An estimation of the amount of living marine resources discarded by species if possible

   r) Were any marine mammals, seabirds, reptiles or other species of concern[2] caught? (Yes/No/Unknown – Y, N, U)

[2] As defined in Annex 14

ANNEX 2
Standard for purse seine fishing activity data

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (set by set) basis.

2. The following fields of data are to be collected:

   a) Vessel flag

   b) Vessel name

   c) Vessel call sign

   d) Registration number of vessel

   e) Set start date and time (UTC format)

   f) Set end date time (UTC format)

   g) Set start position (1/10th degree resolution – decimal format)

   h) Net length

   i) Net height

   j) Intended target species (FAO species code)

   k) Estimated catch retained on board by species (FAO species code) in live weight

   l) An estimation of the amount of living marine resources discarded by species if possible

   m) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y, N, U)

ANNEX 3

Standard for bottom long lining fishing activity data

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (set by set) basis.

2. The following fields of data are to be collected:

   a) Vessel flag

   b) Vessel name

   c) Vessel call sign

   d) Registration number of vessel

   e) Set start date and time (UTC format)

   f) Set end date and time (UTC format)

   g) Set start position (1/10th degree resolution – decimal format)

   h) Set end position (1/10th degree resolution – decimal format)

   i) Intended target species (FAO species code)

   j) Number of hooks

   k) Bottom depth at start of set

   l) Estimated catch retained on board by species (FAO species code) in live weight

   m) An estimation of the amount of living marine resources discarded by species if possible

   n) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y, N, U)

ANNEX 4

Standard for squid jigging fishing activity data

(Taking into account Annex 8)

1. Data are to be collected on a daily basis

2. The following fields of data are to be collected:

   a) Vessel flag

   b) Vessel name

   c) Vessel call sign

   d) Registration number of vessel

   e) Date of fishing activity (UTC date)

   f) Position at start of drift (1/10th degree resolution – decimal format)

   g) Position at end of drift (1/10th degree resolution – decimal format)

   h) Echo Sounder (Yes/No)

   i) Number of crew

   j) Number of single jig machines

   k) Number of double jig machines

   l) Number of jigs per line

   m) Operating depth

   n) Total deck light power (kW)

   o) Total hours fished

   p) Estimated catch retained on board by species (FAO Species code) in live weight

   q) An estimation of the amount of living marine resources discarded by species if possible

   r) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y, N, U)

ANNEX 5

Standard for potting methods fishing activity data

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (set by set) basis

2. The following fields of data are to be collected:

   a) Vessel flag

   b) Vessel name

   c) Vessel call sign

   d) Registration number of vessel

   e) Set start date and time (UTC format)

   f) Set end date and time (UTC format)

   g) Start of set position (1/10th degree resolution – decimal format)

   h) End of set position (1/10th degree resolution – decimal format)

   i) Intended target species (FAO species code)

   j) Depth at start of set

   k) Depth at end of set

   l) Type of pots

   m) Total number of pots set

   n) Type of bait used

   o) Estimated catch retained by species (FAO species code) in live weight

   p) An estimate of the amount of living marine resources discarded by species if possible

   q) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y, N, U)

ANNEX 6

Standard for drop/dahn lining fishing activity data

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (series by series) basis

2. The following fields of data are to be collected:

   a) Vessel flag

   b) Vessel name

   c) Vessel call sign

   d) Registration number of vessel

   e) Set start date and time (UTC format)

   f) Set end date and time (UTC format)

   g) Start of set position (1/10th degree resolution – decimal format)

   h) End of set position (1/10th degree resolution – decimal format)

   i) Intended target species (FAO species code)

   j) Depth at start of set

   k) Depth at end of set

   l) Total number of hooks in the set

   m) Number of hooks lost

   n) Type of hooks used

   o) Type of leader used

   p) Total number of line lifts in the set

   q) Type of bait used

   r) Estimated catch retained by species (FAO species code) in live weight

   s) An estimate of the amount of living marine resources discarded by species if possible

   t) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y, N, U)

ANNEX 7

Standard for Observer Data

A. Vessel & Observer Data to be Collected for Each Observer Trip

1. Vessel and observer details are to be recorded only once for each observed trip, and must be reported in a way that links the vessel data to data required in Sections B, C, and D.

2. The following vessel data are to be collected for each observed trip:

   a) Current vessel flag

   b) Name of vessel

   c) Name of the Captain

   d) Name of the fishing master

   e) Registration number

   f) International radio call sign (if any)

   g) Lloyd's / IMO number (if allocated)

   h) Previous Names (if known)

   i) Port of registry

   j) Previous flag (if any)

   k) Type of vessel (use appropriate ISSCFV codes, Annex 10)

   l) Type of fishing method(s) (use appropriate ISSCFG codes, Annex 9)

   m) Length (m)

   n) Length type e.g. "LOA", "LBP"

   o) Beam (m)

   p) Gross Tonnage – GT (to be provided as the preferred unit of tonnage)

   q) Gross register tonnage – GRT (to be provided if GT not available; may also be provided in addition to GT)

   r) Power of main engine(s) (kilowatts)

   s) Hold capacity (cubic metres)

   t) Record of the equipment on board which may affect fishing power factors (navigational equipment, radar, sonar systems, weather fax or satellite weather receiver, sea-surface temperature image receiver, Doppler current monitor, radio direction finder), where practical

   u) Total number of crew (all staff, excluding observers)

3. The following observer data are to be collected for each observed trip:

   a) Observer's name
   b) Observer's organisation
   c) Date observer embarked (UTC date)
   d) Port of embarkation
   e) Date observer disembarked (UTC date)
   f) Port of disembarkation

B. Catch & Effort Data to be Collected for Trawl Fishing Activity

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (tow by tow) basis for all observed trawls.

2. The following data are to be collected for each observed trawl tow:

   a) Tow start date and time (the time gear starts fishing - UTC)

   b) Tow end date and time (the time haul back starts - UTC)

   c) Tow start position (Lat/Lon, 1 minute resolution - decimal)

   d) Tow end position (Lat/Lon, 1 minute resolution - decimal)

   e) Intended target species (FAO species code)

   f) Type of trawl, bottom or mid-water (use appropriate bottom or midwater trawl codes from the standard ISCCFG fishing gear standards attached at Annex 9)

   g) Type of trawl: single, double or triple (S, D or T)

   h) Height of net opening

   i) Width of net opening

   j) Mesh size of the cod-end net (stretched mesh, mm) and mesh type (diamond, square, etc)

   k) Gear depth (of footrope) at start of fishing

   l) Bottom (seabed) depth at start of fishing

   m) Estimated catch of all species (FAO species code) retained on board, split by species, in live weight (to the nearest kg)

   n) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown)

   o) If yes, record the numbers by species of all marine mammals, seabirds, reptiles or other species of concern caught.

   p) Was there any benthic material in the trawl? (Yes/No/Unknown)

   q) If yes, record sensitive benthic species in the trawl catch, particularly vulnerable or habitat-forming species such as sponges, sea-fans or corals

   r) Estimate of the amount (weight or volume) of remaining marine resources not recorded under items 2(m) to 2(o) discarded, split to the lowest known taxon.

   s) Record any bycatch mitigation measures employed:

      i. Were bird scaring (tori) lines in use? (nil/equipment code - as described in Section L)

      ii. Were bird bafflers in use? (nil/equipment code - as described in Section N)

      iii. Describe the offal/discard discharge management in place (select all that apply: no discharge during shooting and hauling/ only liquid discharge/waste batching ≥ 2 hours/other/none)

      iv. Were any other measures used to reduce the bycatch of marine mammals, seabirds, reptiles or species of concern? (Yes/No)

      If yes, describe

C. Catch & Effort Data to be Collected for Purse Seine Fishing Activity

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (set by set) basis for all observed purse-seine sets.

2. The following data are to be collected for each observed purse-seine set:

   a) Total search time before this set, since the last set

   b) Set start date and time (the time gear starts fishing - UTC)

   c) Set end date and time (the time haul back starts - UTC)

   d) Set start position (Lat/Lon, 1 minute resolution - decimal)

   e) Net length (m)

   f) Net height (m)

   g) Net mesh size (stretched mesh, mm) and mesh type (diamond, square, etc)

   h) Intended target species (FAO species code)

   i) Estimated catch of all species (FAO species code) retained on board, split by species, in live weight (to the nearest kg)

   j) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown)

      i. If yes, record the numbers by species of all marine mammals, seabirds or reptiles caught

   k) Was there any benthic material in the net? (Yes/No/Unknown)

      ii. If yes, record sensitive benthic species in the catch, particularly vulnerable or habitat-forming species such as sponges, sea-fans or corals

   l) Estimate of the amount (weight or volume) of remaining marine resources not recorded under items 2(i) to 2(k) discarded, split to the lowest known taxon

   m) Record and describe any bycatch mitigation measures employed

D. Catch & Effort Data to be Collected for Bottom Long Line Fishing Activity

(Taking into account Annex 8)

1. Data are to be collected on an un-aggregated (set by set) basis for all observed longline sets.

2. The following fields of data are to be collected for each set:

   a) Set start date and time (UTC format)

   b) Set end date and time (UTC format)

   c) Set start position (Lat/Lon, 1 minute resolution – decimal format)

   d) Set end position (Lat/Lon, 1 minute resolution – decimal format)

   e) Intended target species (FAO species code)

   f) Total length of longline set (km)

   g) Number of hooks for the set

   h) Bottom (seabed) depth at start of set

   i) Number of hooks actually observed (including for marine mammals, seabirds, reptiles or other species of concern caught) during the haul

   j) Estimated catch of all species (FAO species code) retained on board, split by species, in live weight (to the nearest kg)

   k) Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown)

      i. If yes, record the numbers by species of all marine mammals, seabirds, reptiles or other species of concern caught

   l) Was there any benthic material in the catch? (Yes/No/Unknown)

      ii. If yes, record sensitive benthic species in the catch, particularly vulnerable or habitat-forming species such as sponges, sea-fans or corals

   m) Estimate of the amount (weight or volume) of remaining marine resources not recorded under items 2j to 2l discarded, split to the lowest known taxon

   n) Record any bycatch mitigation measures employed

      i. Were bird scaring (tori) lines in use? (nil/equipment code - as described in Section L)

      ii. Was setting restricted to between the times of nautical dusk and nautical dawn? (Yes/No)

      iii. What type of fishing gear was used? (external weighting system/internal weighting system/trot line/other)

      iv. If external weighting system, describe weighting and float regime (using the form provided in Section M)

      v. If internal weighting system, what was the line core's weight (grams per metre)?

      vi. If trot line, were cachalotera nets used? (Yes/No)

      vii. If other, describe

   o) What haul mitigation was used? (bird deterrent curtains/other/none)

      i. If other, describe.

p) What was the bait type? (fish/squid/mixed; live/dead/mixed; frozen/thawed/mixed)

q) Describe discharge of any biological material during shooting and hauling (discharge not batched for two hours or more/discharge batched for two hours or more/none/unknown)

r) Were any other measures used to reduce the bycatch of marine mammals, seabirds, reptiles or other species of concern? (Yes/No)

   i. If yes, describe

E. Length-Frequency Data to Be Collected

Representative and randomly sampled length-frequency data are to be collected for the target species and, time permitting, for other main by-catch species. Length data should be collected and recorded at the most precise level appropriate for the species (cm or mm and whether to the nearest unit or unit below) and the type of measurement used (total length, fork length, or standard length) should also be recorded. If possible, total weight of length-frequency samples should be recorded, or estimated and the method of estimation recorded, and observers may be required to also determine sex of measured fish to generate length-frequency data stratified by sex.

1. Commercial Sampling Protocol

a) Fish species other than skates, rays and sharks:

   i. fork length should be measured to the nearest cm for fish which attain a maximum length greater than 40 cm fork length

   ii. fork length should be measured to the nearest mm for fish which attain a maximum length less than 40 cm fork length

b) Skates and rays:

   i. maximum disk width should be measured

c) Sharks

   i. Appropriate length measurement to be used should be selected for each species (see FAO technical report 474 on measuring sharks). As a default, total length should be measured.

2. Scientific Sampling Protocol

For scientific sampling of species, length measurements may need to be made at a finer resolution than specified above.

F. Biological Sampling to be Conducted

1. The following biological data should be collected for representative samples of the main target species and, time permitting, for other main by-catch species contributing to the catch:
   a) Species
   b) Length (mm or cm), with record of the type of length measurement used. Measurement precision and type should be determined on a species by species basis consistent with that defined in Section E above.
   c) Sex (male, female, immature, unsexed)
   d) Maturity stage
2. Observers should collect tissue, otolith and/or stomach samples according to pre- determined specific research programmes implemented by the Scientific Committee or other national scientific research.
3. Observers are to be briefed and provided with written length-frequency and biological sampling protocols, where appropriate, and priorities for the above sampling specific to each observer trip.

G. Data to be Collected on Incidental Captures of seabirds, mammals, reptiles (turtles) and other species of concern

1. The following data are to be collected for all seabirds, mammals, reptiles (turtles) and other species of concern caught in fishing operations:
   a) Species (identified taxonomically as far as possible, or accompanied by photographs if identification is difficult) and size
   b) Count of the number of each species caught per tow or set
   c) Fate of bycaught animal(s) (retained or released/discarded).
   d) If released, life status (vigorous, alive, lethargic, dead) upon release
   e) If dead, then collect adequate information or samples[3] for onshore identification in accordance with pre-determined sampling protocols. Where this is not possible, observers may be required to collect sub-samples of identifying parts, as specified in biological sampling protocols.
   f) Record the type of interaction (hook/line entanglement/warp strike/net capture/other)

      If other, describe

2. Record sex of each individual for taxa where this is feasible from external observation, e.g. pinnipeds, small cetaceans or elasmobranchii species of concern.

3. Were there any circumstances or actions that may have contributed to the bycatch event? (e.g. tori line tangle, high levels of bait loss).

[3] Options include: return of carcasses for necropsy, photographs taken using appropriate protocols or tissue or feather samples for genetic determination.

H. Detection of Fishing in Association with Vulnerable Marine Ecosystems

1. For each observed trawl, the following data are to be collected for all sensitive benthic species caught, particularly vulnerable or habitat-forming species such as sponges, sea fans, or corals:

   a) Species (identified taxonomically as far as possible, or accompanied by a photograph where identification is difficult)

   b) An estimate of the quantity (weight (kg) or volume (m^3)) of each listed benthic species caught in the tow

   c) An overall estimate of the total quantity (weight (kg) or volume (m^3)) of all invertebrate benthic species caught in the tow

   d) Where possible, and particularly for new or scarce benthic species which do not appear in ID guides, whole samples should be collected and suitably preserved for identification on shore

I. Data to be Collected for all Tag Recoveries

1. The following data are to be collected for all recovered fish, seabird, mammal or reptile tags if the organism is dead, to be retained, or alive:

   a) Observer name

   b) Vessel name

   c) Vessel call sign

   d) Vessel flag

   e) Collect, label (with all details below) and store the actual tags for later return to the tagging agency

   f) Species from which tag recovered

   g) Tag colour and type (spaghetti, archival)

   h) Tag numbers (the tag number is to be provided for all tags when multiple tags were attached to one fish. If only one tag was recorded, a statement is required that specifies whether or not the other tag was missing). If the organism is alive and to be released, tag information should be collected in accordance with pre-determined sampling protocols.

   i) Date and time of capture (UTC)

   j) Location of capture (Lat/Lon, to the nearest 1 minute)

   k) Animal length / size (cm or mm) with description of what measurement was taken (such as total length, fork length, etc). Length measurements should be collected according to the criteria defined in Section E above

   l) Sex (F=female, M=male, I=indeterminate, D=not examined)

   m) Whether the tags were found during a period of fishing that was being observed (Y/N)

Reward information (e.g. name and address where to send reward)

(It is recognised that some of the data recorded here duplicates data that already exists in the previous categories of information. This is necessary because tag recovery information may be sent separately to other observer data.)

J. Hierarchies for Observer Data Collection

1. Recognising that observers may not be able to collect all of the data described in these standards on each trip, a hierarchy of priorities is to be implemented for collection of observer data. Trip-specific or programme-specific observer task priorities may be developed in response to specific research programme requirements, in which case such priorities should be followed by observers.

2. In the absence of trip- or programme-specific priorities, the following generalised priorities should be followed by observers:

   a) Fishing Operation Information

      i. All vessel and tow / set / effort information

   b) Reporting of Catches

      i. Record time, weight of catch sampled versus total catch or effort (e.g. number of hooks), and total numbers of each species caught

      ii. Identification and counts of seabirds, mammals, reptiles (turtles), sensitive benthic species and vulnerable species

      iii. Record numbers or weights of each species retained or discarded

      iv. Record instances of depredation, where appropriate

   c) Biological Sampling

      i. Check for presence of tags

      ii. Length-frequency data for target species

      iii. Basic biological data (sex, maturity) for target species

      iv. Length-frequency data for main by-catch species

      v. Otoliths (and stomach samples, if being collected) for target species

      vi. Basic biological data for by-catch species

      vii. Biological samples of by-catch species (if being collected)

      viii. Take photos

   d) The reporting of catches and biological sampling procedures should be prioritised among species groups as follows:

Species	Priority (1 highest)
Primary target species (such as jack mackerel, for pelagic fisheries, and orange roughy for demersal fisheries)	1
Seabirds, mammals, reptiles (turtles) or other species of concern	2
Other species typically within top 5 in the fishery (such as blue mackerel for pelagic fisheries, and oreos and alfonsino for demersal fisheries)	3
All other species	4

The allocation of observer effort among these activities will depend on the type of operation and setting. The size of sub-samples relative to unobserved quantities (e.g. number of hooks examined for species composition relative to the number of hooks set) should be explicitly recorded under the guidance of Member and CNCP observer programmes.

K. Coding Specifications to be Used for Recording Observer Data

1. Unless otherwise specified for specific data types, observer data are to be provided in accordance with the same coding specifications as specified in Annex 8 of the SPRFMO Data Standards.

2. Coordinated Universal Time (UTC) is to be used to describe times.

3. Decimal degrees are to be used to describe locations.

4. The following coding schemes are to be used:

   a) Species are to be described using the FAO 3 letter species codes[4]

   b) Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes (Annex 9)

   c) Types of fishing vessel are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes (Annex 10)

5. Metric units of measure are to be used, specifically:

   a) Kilograms are to be used to describe catch weight

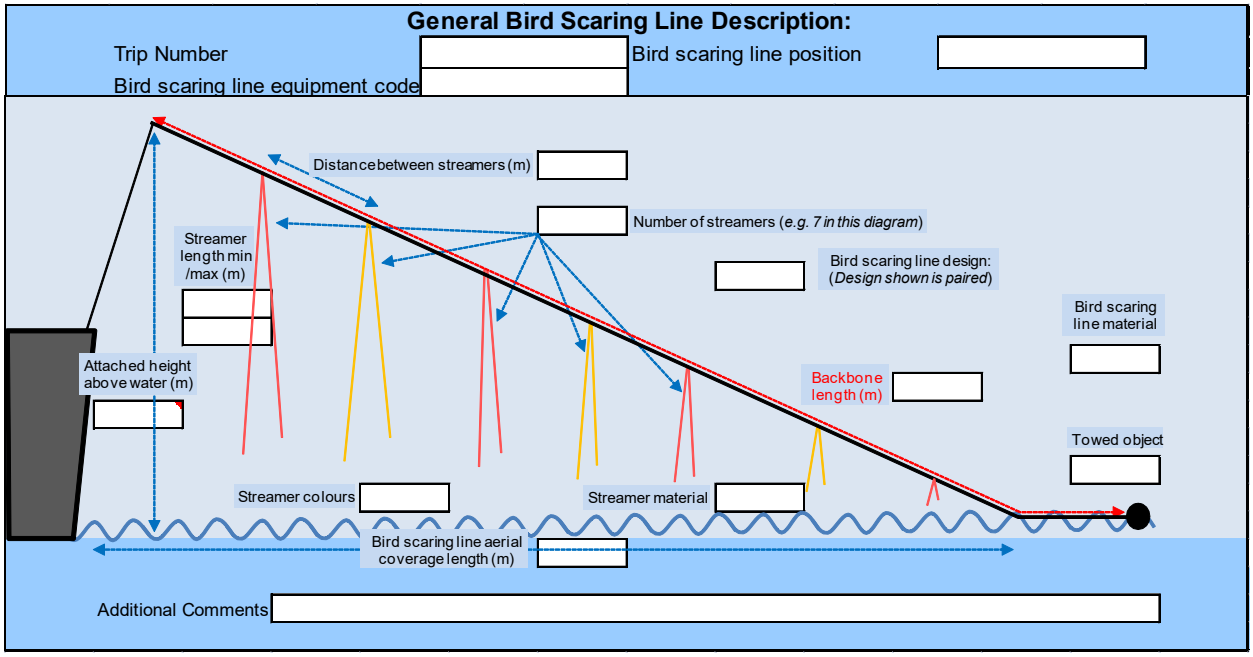
   b) Metres are to be used to describe height, width, depth, beam or length

   c) Cubic metres are to be used to describe volume

   d) Kilowatts are to be used to describe engine power

[4] www.fao.org/fi/statist/fisoft/asfis/asfis.asp

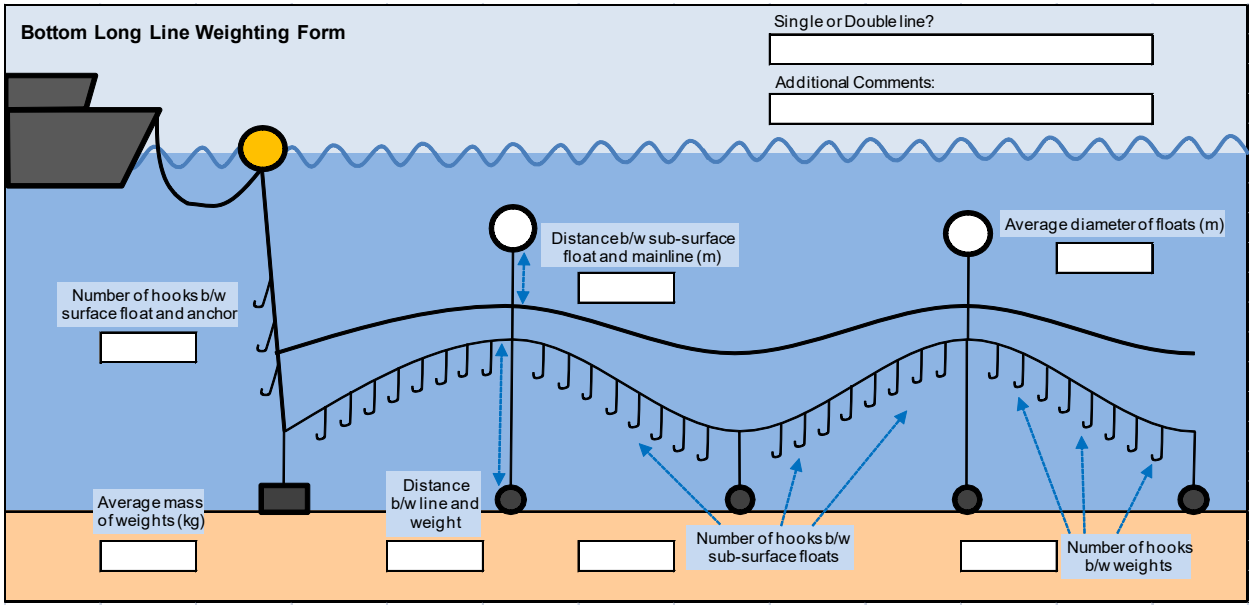
L. Bird scaring line description form



Summary of Inputed Values:			
Trip Number		Distance between streamers	
Bird scaring line equipment code		Streamer length (min)	
Bird scaring line position		Streamer length (max)	
Backbone length		Streamer colour	
Aerial coverage length		Streamer material	
Attached height above water		Number of streamers	
Bird scaring line material		Towed object	
Bird scaring line design		Additional comments	

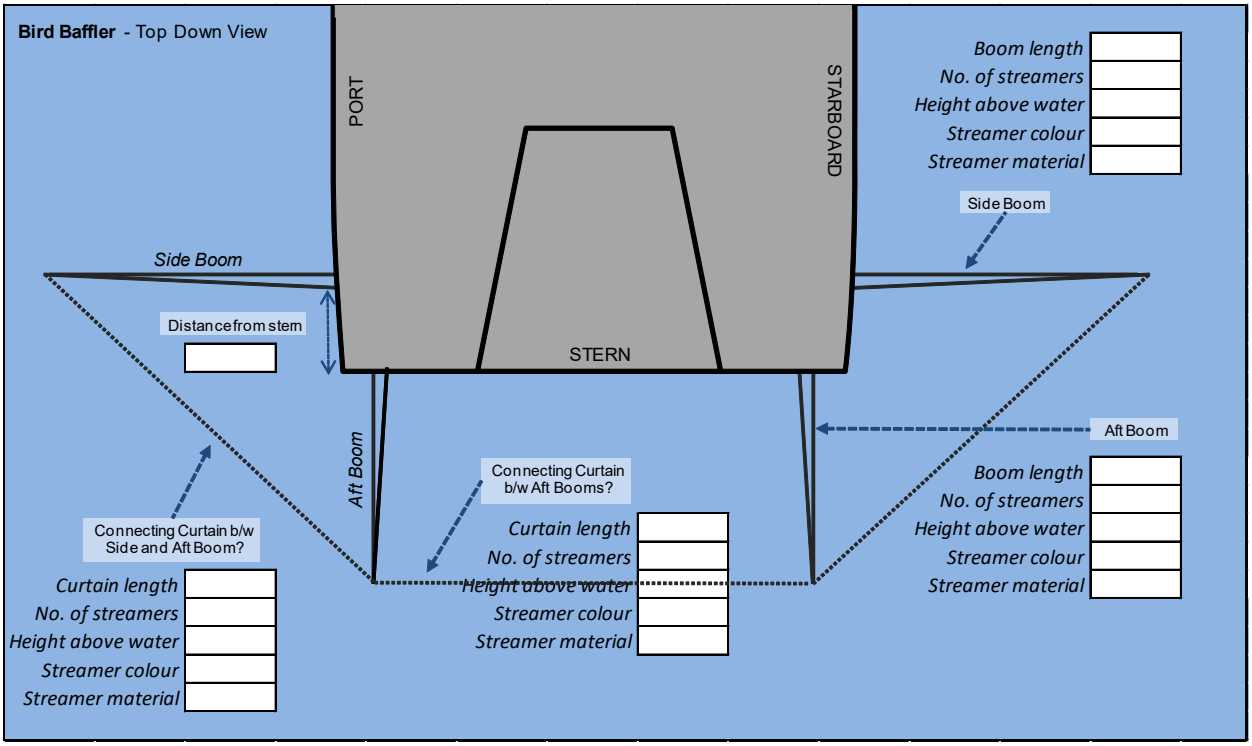
Bird Scaring Line Codes/ List Options:				
Position	Design	Towed Object	Material	Colour
Port Side Starboard Side Stern	Single Paired	F = Inverted funnel/plastic cone L = Length of thick line K = Knot or loop of thick line B = Buoy N = Netted buoy S = Sack or bag W = Weight Z = No towed object O = Other	T = Plastic tubing S = Plastic strapping O = Other	P = Pink R = Red C = Carrot (Orange) Y = Yellow G = Green B = Blue W = Brown F = Faded colour (any colour) O = Other

M. External line weighting description form



Summary of Inputed Values:			
Single or Double line?		Number of hooks b/w surface float & anchor	
Avg mass of weights		Number of hooks b/w sub-surface floats	
Distance b/w sub-surface float and mainline		Number of hooks b/w weights	
Distance b/w line and weight		Additional comments	

N. Bird baffler description form



Summary of Inputted Values	
• Distance from stern	
Side Boom • Boom length • Number of streamers • Avg. distance b/w streamers • Height above water • Streamer colour • Streamer material	Aft Boom • Boom length • Number of streamers • Avg. distance b/w streamers • Height above water • Streamer colour • Streamer material
Side-Aft Curtain • Curtain length • Number of streamers • Avg. distance b/w streamers • Height above water • Streamer colour • Streamer material	Aft Curtain • Curtain length • Number of streamers • Avg. distance b/w streamers • Height above water • Streamer colour • Streamer material

O. Standard for Observer Data collected during a Landing or while a vessel is in port

With regards to fishing vessels flying their flag, and landing unprocessed (i.e. whole and no part of the fish having been removed) SPRFMO managed species, and where these landings are observed, Members and CNCPs may collect and provide the following information:

1. The following vessel data for each observed landing:

   a) Current vessel flag

   b) Name of vessel

   c) Fishing vessel registration number

   d) International radio call sign (if any)

   e) Lloyd's / IMO number (if allocated)

   f) Type of vessel (use appropriate ISSCFV codes, Annex 10)

   g) Type of fishing method(s) (use appropriate ISSCFG codes, Annex 9)

2. The following observer data for each observed landing:

   a) Observer's name

   b) Observer's organisation

   c) Country of landing (standard ISO 3-alpha country codes)

   d) Port/Point of landing

3. The following data for each observed landing:

   a) Landing Date and time (UTC format)

   b) First day of trip – to the extent practicable

   c) Last day of trip – to the extent practicable

   d) Indicative fishing area (decimal Lat/Long, 1 minute resolution – to the extent practicable)

   e) Main target species (FAO species code)

   f) Landed state by species (FAO species code)

   g) Landed (live) weight by species (kilograms) for the landing event being observed

In addition, the collection of Length-Frequency data, Biological data and/or Tag recovery data should follow the standards described in parts E, F and I respectively of this Annex for those species observed during landings or while a vessel is in port.

Members and CNCPs should note that Annex 7 parts G (Incidental capture) and H (VMEs) are not considered relevant for observed landings. However, the standards described in parts I (Tag recovery), J (Hierarchies) and K (Coding specifications) should still be followed when possible.

ANNEX 8

Specifications for the exchange of data

1. Coordinated Universal Time (UTC) is to be used to describe times, using the following submission format:

YYYY-MON-DDThh:mm:ss

Where:

YYYY - represents a 4-digit year e.g. “2007”

MON - represents a 3-character month abbreviation e.g.”APR”

DD - represents a 2-digit day e.g. “05”

T - is a space separator

hh - represents hours based on the 24hr clock (length = 2 digits) e.g. “16”

mm - represents minutes (length = 2 digits) e.g. “05”

ss - represents seconds (length = 2 digits) e.g. “00”

Example

2003-JUL-17T13:10:00 1.10pm (1310h), 17 July 2003

2. Decimal degrees (WGS84) are to be used to describe locations

The following standard should be used for the submission of latitudinal/ longitudinal information:

- Northern latitudes and eastern longitudes should be indicated by the use of [un-signed] positive decimal degree values
- Southern latitudes and western longitudes should be indicated by the use of negative decimal degree values

Latitude	Degrees: represented as positive (unsigned) or negative numbers from 0 to 89.99 e.g. If value = 83.2, this means 83.2° **N** e.g. if value = -83.2, this means 83.2° **S**
Longitude	Degrees: represented as positive (unsigned) or negative numbers from 0 to 179.99 e.g. If value = 83.2, this means 83.2° **E** e.g. if value = -83.2, this means 83.2° **W**

3. The following coding schemes are to be used:

   a) Species are to be described using the FAO 3 letter species codes[5]

   b) Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes[6] - Annex 9

   c) Types of fishing vessel are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes[7] - Annex 10

4. Metric units of measure are to be used, specifically:

   a) Kilograms are to be used to describe catch weight

   b) Metres are to be used to describe height, width, depth, beam or length

   c) Cubic metres are to be used to describe volume

   d) Kilowatts are to be used to describe engine power

[5] www.fao.org/fi/statist/fisoft/asfis/asfis.asp
[6] http://www.fao.org/fishery/cwp/handbook/M - see "Annex MI"
[7] http://www.fao.org/fishery/cwp/handbook/L - see "Annex L.II"

ANNEX 9

ISSCFG Codes

INTERNATIONAL STANDARD STATISTICAL CLASSIFICATION OF FISHING GEAR (ISSCFG) (29 July 1980)

Gear Categories Abbreviation Code	Standard Abbreviations	ISSCFG
SURROUNDING NETS		01.0.0
With purse lines (purse seines)	PS	01.1.0
- one boat operated purse seines	PS1	01.1.1
- two boats operated purse seines	PS2	01.1.2
Without purse lines (lampara)	LA	01.2.0
SEINE NETS		02.0.0
Beach seines	SB	02.1.0
Boat or vessel seines	SV	02.2.0
- Danish seines	SDN	02.2.1
- Scottish seines	SSC	02.2.2
- pair seines	SPR	02.2.3
Seine nets (not specified)	SX	02.9.0
TRAWLS		03.0.0
Bottom trawls		03.1.0
- beam trawls	TBB	03.1.1
- otter trawls[13]	OTB	03.1.2
- pair trawls	PTB	03.1.3
- nephrops trawls	TBN	03.1.4
- shrimp trawls	TBS	03.1.5
- bottom trawls (not specified)	TB	03.1.9
Midwater trawls		03.2.0
- otter trawls[8]	OTM	03.2.1
- pair trawls	PTM	03.2.2
- shrimp trawls	TMS	03.2.3
- midwater trawls (not specified)	TM	03.2.9
Otter twin trawls	OTT	03.3.0
Otter trawls (not specified)	OT	03.4.9
Pair trawls (not specified)	PT	03.5.9
Other trawls (not specified)	TX	03.9.0
DREDGES		04.0.0
Boat dredges	DRB	04.1.0
Hand dredges	DRH	04.2.0
LIFT NETS		05.0.0
Portable lift nets	LNP	05.1.0
Boat-operated lift nets	LNB	05.2.0
Shore-operated stationary lift nets	LNS	05.3.0
Lift nets (not specified)	LN	05.9.0
FALLING GEAR		06.0.0

[8] Fisheries agencies may indicate side and stern bottom, and side and stern midwater trawls, as OTB-1 and OTB-2, and OTM-1 and OTM-2, respectively

Gear Categories Abbreviation Code	Standard Abbreviations	ISSCFG
Cast nets	FCN	06.1.0
Falling gear (not specified)	FG	06.9.0
GILLNETS AND ENTANGLING NETS		07.0.0
Set gillnets (anchored)	GNS	07.1.0
Driftnets	GND	07.2.0
Encircling gillnets	GNC	07.3.0
Fixed gillnets (on stakes)	GNF	07.4.0
Trammel nets	GTR	07.5.0
Combined gillnets-trammel nets	GTN	07.6.0
Gillnets and entangling nets (not specified)	GEN	07.9.0
Gillnets (not specified)	GN	07.9.1
TRAPS		08.0.0
Stationary uncovered pound nets	FPN	08.1.0
Pots	FPO	08.2.0
Fyke nets	FYK	08.3.0
Stow nets	FSN	08.4.0
Barriers, fences, weirs, etc.	FWR	08.5.0
Aerial traps	FAR	08.6.0
Traps (not specified)	FIX	08.9.0
HOOKS AND LINES		09.0.0
Handlines and pole-lines (hand-operated)[9]	LHP	09.1.0
Handlines and pole-lines (mechanized)[10]	LHM	09.2.0
Set longlines	LLS	09.3.0
Drifting longlines	LLD	09.4.0
Longlines (not specified)	LL	09.5.0
Trolling lines	LTL	09.6.0
Hooks and lines (not specified)	LX	09.9.0
GRAPPLING AND WOUNDING		10.0.0
Harpoons	HAR	10.1.0
HARVESTING MACHINES		11.0.0
Pumps	HMP	11.1.0
Mechanised dredges	HMD	11.2.0
Harvesting machines (not specified)	HMX	11.9.0
MISCELLANEOUS GEAR[11]	MIS	20.0.0
RECREATIONAL FISHING GEAR	RG	25.0.0
GEAR NOT KNOW OR NOT SPECIFIED	NK	99.0.0

[9] Including jigging lines

[10] Code LDV for dory-operated line gears will be maintained for historical data purposes

[11] This item includes: hand and landing nets, drive-in-nets, gathering by hand with simple hand implements with or without diving equipment, poisons and explosives, trained animals, electrical fishing

ANNEX 10

ISSCFV Codes

INTERNATIONAL STANDARD STATISTICAL CLASSIFICATION OF FISHERY VESSELS BY VESSEL TYPES (approved by CWP-12, 1984)

Vessel Type		Standard Abbreviation	Code
TRAWLERS		TO	01.0.0
	Side trawlers	TS	01.1.0
	Side trawlers wet-fish	TSW	01.1.1
	Side trawlers freezer	TSF	01.1.2
	Sterntrawlers	TT	01.2.0
	Sterntrawlers wet-fish	TTW	01.2.1
	Sterntrawlers freezer	TTF	01.2.2
	Sterntrawlers factory	TTP	01.2.3
	Outrigger trawlers	TU	01.3.0
	Trawler nei	TOX	01.9.0
SEINERS		SO	02.0.0
	Purse seiners	SP	02.1.0
	North American type	SPA	02.1.1
	European type	SPE	02.1.2
	Tuna purse seiners	SPT	02.1.3
	Seiner netters	SN	02.2.0
	Seiner nei	SOX	02.9.0
DREDGERS		DO	03.0.0
	Using boat dredge	DB	03.1.0
	Using mechanical dredge	DM	03.2.0
	Dredgers nei	DOX	03.9.0
LIFT NETTERS		NO	04.0.0
	Using boat operated net	NB	04.1.0
	Lift netters nei	BOX	04.9.0
GILL NETTERS		GO	05.0.0
TRAP SETTERS		WO	06.0.0
	Potvessels	WOP	06.1.0
	Trap setters nei	WOX	06.9.0
LINERS		LO	07.0.0
	Handliners	LH	07.1.0
	Longliners	LL	07.2.0
	Tuna longliners	LLT	07.2.1
	Pole and line vessels	LP	07.3.0
	Japanese type	LPJ	07.3.1
	American type	LPA	07.3.2
	Trollers	LT	07.4.0
	Liners nei	LOX	07.9.0
VESSELS USING PUMPS FOR FISHING		PO	08.0.0
MOTHERSHIPS		HO	11.0.0
	Salted-fish motherships	HSS	11.1.0
	Factory motherships	HSF	11.2.0

Vessel Type		Standard Abbreviation	Code
	Tuna motherships	HST	11.3.0
	Motherships for two-boat purse seining	HSP	11.4.0
	Motherships nei	HOX	11.9.0
FISH CARRIERS		FO	12.0.0
HOSPITAL SHIPS		KO	13.0.0
PROTECTION AND SURVEY VESSELS		BO	14.0.0
FISHERY RESEARCH VESSELS		ZO	15.0.0
FISHERY TRAINING VESSELS		CO	16.0.0
NON-FISHING VESSELS nei		VOX	99.0.0

Source: CWP Handbook of Fishery Statistical Standards (p.206). FAO, Rome. 2004.

ANNEX 11

Standard for Landings Data: Fishing and Reefer Vessels

With regard to the fishing vessels flying their flag that directly harvested non-highly migratory fishery resources in the Convention Area

Members and CNCPs are to:

1. Collect data on an individual landings basis

2. Collect the following fields of data:

   a) Current vessel flag
   b) Name of vessel
   c) Registration number of vessel
   d) International radio call sign (if any)
   e) Lloyd's / IMO number (if allocated)
   f) Date entered Convention Area
   g) Date exited Convention Area
   h) Landing date
   i) Area catch taken (FAO area[12])
   j) Country of landing (standard ISO 3-alpha country codes)
   k) Port/ point of landing
   l) Landed state[13] by species (FAO species code)
   m) Landed (live) weight by species
   n) Containers –type by species (if applicable)
   o) Containers –number by species (if applicable)
   p) Containers –total content weight for all containers by species (if applicable)
   q) Port of previous landing
   r) Date of arrival at previous port
   s) Verification (if applicable):
      i. Name of observer
      ii. Authority

[12] FAO statistical area codes

[13] Landed state: This means the "state" in which the fish was landed. States may include "live" (fish has not been processed and no part of the fish has been removed), or other states, for example headed and gutted, filleted, etc.

With regard to reefer vessels flying their flag and transporting non-highly migratory fishery resources in the Convention Area

Members and CNCPs are to:

1. Collect data on an individual unloading (landing) basis

2. Collect the following fields of data:

VESSEL

a) Current flag state
b) Name of vessel
c) Registration number of vessel
d) Radio call sign (If any)
e) IMO number/Lloyd number (if allocated)
f) Name of charter party or owner

GENERAL INFORMATION ON THE UNLOADING (LANDING)

a) Country of landing (using 3 alpha ISO codes)
b) Port/point of landing
c) Landing date
d) Port of previous destination if in Convention Area

LANDING DESCRIPTION SPLIT BY SPECIES, FOR EACH SPECIES

a) Landed state[14]
b) Containers - Type
c) Containers – Number
d) Containers – Total Content weight for all containers

TRANSHIPMENT (IF WITHIN THE CONVENTION AREA).

a) Name(s) of fishing vessel(s) (delivering)
b) IMO number/Lloyd number (if allocated)
c) Total net weight(s) of product transhipped by species by vessel(s)
d) Date(s) of transhipment activities by vessel(s)

VERIFICATION (IF APPLICABLE)

a) Name of observer
b) Port authority

[14] Landed state: This means the "state" in which the fish was landed. States may include "live" (fish has not been processed and no part of the fish has been removed), or other states for example headed and gutted, filleted, etc.

ANNEX 12

Standard for Transhipment Data

(Taking into account Annex 8)

With regard to the fishing vessels flying their flag and fishing for non-highly migratory fishery resources in the Convention Area-

Members and CNCPs are to:

1. Collect data on an individual transhipment basis

2. Collect the following fields of data:

DETAILS OF TRANSHIPPING VESSEL (DELIVERING)

a) Name of vessel
b) Registration number
c) Radio call sign
d) Vessel flag state
e) IMO number/ IHS Fairplay number (if allocated)
f) Master of transhipping vessel

DETAILS OF REEFER VESSEL (RECEIVING)

a) Name of vessel
b) Registration number
c) Radio call sign
d) Vessel flag state
e) IMO number/ IHS Fairplay number (if allocated)
f) Master of reefer vessel

TRANSHIPMENT OPERATION

a) Date and time of commencement of transhipment (UTC)
b) Date and time of completion of transhipment (UTC)
c) Position (nearest 1/10th degree) at commencement of transhipment (decimal)
d) Position (nearest 1/10th degree) at completion of transhipment (decimal)
e) Description of product type by species (e.g. whole, frozen fish in 20 kg cartons)
f) Number of cartons, net weight (kg) of product, by species
g) Total net weight of product transhipped (kg)
h) Hold numbers in reefer vessel in which product is stowed
i) Destination port of reefer vessel
j) Arrival date estimate
k) Landing date estimate

VERIFICATION (IF APPLICABLE)

a) Name of observer
b) Authority

ANNEX 13

Standard for Annual Catch Data

Annual catch summaries should list all species/groups caught in the Convention Area during the Calendar year.

For a calendar year and for each distinct combination of Sea Type, FAO statistical area, and FAO species/ group name (for that calendar year), provide the following data:

a) Calendar year
b) Sea Type (either "HS" – High Seas - or "EEZ" – Exclusive Economic Zone)
c) FAO Statistical Area (e.g. FAO87)
d) Species/ group name (e.g. orange roughy)
e) Species/ group code (FAO 3-alpha code[15], e.g. ORY)
f) Annual catch total – tonnes raised to "live" weight

[15] www.fao.org/fi/statist/fisoft/asfis/asfis.asp

ANNEX 14

Definition of "other species of concern"

As advised by the Scientific Committee and informed by Appendix 1 of the Convention on the Conservation of Migratory Species of Wild Animals (a.k.a. CMS or Bonn Convention), the International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species, Appendix 1 and 2 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), "other species of concern" are defined, as of January 2017, as:

Scientific name	English name	3-alpha code[16]
Carcharhinus longimanus	Oceanic whitetip shark	OCS
Carcharodon carcharias	Great white shark	WSH
Cetorhinus maximus	Basking shark	BSK
Lamna nasus	Porbeagle shark	POR
Manta spp.	Manta rays	MNT
Mobula spp.	Mobula nei	RMV
Rhincodon typus	Whale shark	RHN

Other species may be added by agreement of the Members based on the advice of the Scientific Committee[17].

[16] 2016 ASFIS List of Species for Fishery Statistics Purposes

[17] The species listed in Annex 5 of SC04 will be considered for further assessment during SC05 in order to provide a full recommendation on "other species of concern" for the consideration of the 6th SPRFMO Commission meeting.