1st Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific Committee

21-24 March 2015, Esplanade Hotel, Fremantle

SC-01-06 (01)

Benchmark Standards for the Collection, Reporting, Verification and Exchange of Scientific Data for SIOFA

Relates to agenda item: 6 *Working paper* ☒ *info paper* ☐

Delegation of Australia

Abstract

This paper discusses the scientific data collection and reporting standards relevant to the fisheries under the responsibility of the Southern Indian Ocean Fisheries Agreement (SIOFA). The data standards presented are those currently adopted for Commonwealth Fisheries in Australia and are structured under the following headers: Data on fishing activities and the impacts of fishing; Observer data; Vessel Monitoring System data; Historical data; Data verification; Data exchange; and Confidentiality. The information should assist the Scientific Committee with developing data standards that are international best practice and harmonized with adjacent and overlapping RFMOs, or RFMOs that also have competence over demersal species which will allow for future cross RFMO scientific analyses (if required).

Recommendations

1: the Scientific Committee consider the proposals in this document and amend (if necessary) the data standards as described in this paper to ensure that SIOFA adopts international best practice scientific data collection standards

2: the Scientific Committee recommend to the next Meeting of the Parties these scientific data standards (after revision by the Scientific Committee) be adopted as SIOFA data standards.

Australian Government
Department of Agriculture and Water Resources
ABARES

Benchmark Standards for the Collection, Reporting, Verification and Exchange of Scientific Data for SIOFA

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Research by the Australian Bureau of Agricultural and Resource Economics and Sciences

SIOFA document number: SC-01-06 (01)
February 2016

Cataloguing data

This publication (and any material sourced from it) should be attributed as: Maloney L, Benchmark Standards for the Collection, Reporting, Verification and Exchange of Scientific Data for SIOFA, Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), Canberra, February 2016.

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Acknowledgements

This work was supported by the Fisheries Resources Research Fund and ABARES. The author thanks James Larcombe, Simon Nicol and Ilona Stobutzki (ABARES), Ryan Keightley and George Day (AFMA) and Kerrie Robertson (Department of Agriculture and Water Resources) for their comments on the paper.

Contents

1 Introduction

This paper discusses the scientific data collection and reporting standards relevant to the fisheries under the responsibility of the Southern Indian Ocean Fisheries Agreement (SIOFA). In this context it provides relevant information for the Contracting Parties, cooperating non Contracting Parties (CNCPs) and Participating Fishing Entities (PFEs) regarding data collection from the fishing vessels flying their flag and fishing for non-highly migratory fishery resources in the Agreement Area.

In preparing this document the scientific data standards of the South Pacific Regional Fisheries Management Organisation (SPFRMO), Northwest Atlantic Fisheries Organisation (NAFO), South East Atlantic Fisheries Organisation (SEAFO) and the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) were examined. The standards cover:

1) Data on fishing activities and the impacts of fishing
2) Observer data
3) Vessel Monitoring System data
4) Historical data
5) Data verification
6) Data exchange
7) Confidentiality

This document aims to provide the Scientific Committee with the background material necessary for developing scientific data standards that are harmonized with adjacent and overlapping RFMOs, or RFMOs that also have competence over demersal species which will allow for future cross RFMO scientific analyses (if required). They provide the Scientific Committee a basis for developing data standards that are international best practice.

2 Benchmark standards for the Collection, Reporting, Verification and Exchange of Data

1. Data on fishing activities and the impacts of fishing

a) Australia proposes that Contracting Parties, cooperating non Contracting Parties (CNCPs) and Participating Fishing Entities (PFEs) compile data on fishing activities and the impacts of fishing and provide these in a timely manner to the Secretariat of the SIOFA. Such data should be provided in sufficient detail to facilitate effective stock assessment. Data collected should include transhipment activities, target, non-target, and associated and dependent species. Data fields for specific fishing methods, based on the known fishing methods in the SIOFA Area, are proposed at annex [1.1 - 1.6.]:

I. Annex 1.1 for trawling methods

II. Annex 1.2 for bottom long lining methods

III. Annex 1.3 for trapping/potting methods

IV. Annex 1.4 for dahn/drop lining methods and;

V. Annex 1.5 for gillnetting methods (the relevance of this standard depends on the Meeting of Parties considerations regarding the prohibiting of deepwater gillnets and large-scale pelagic drift nets in the SIOFA Agreement Area)

VI. Annexes 1.6 and 1.7 on landings and transhipments

b) Australia proposes that the Scientific Committee determine a date that all Contracting Parties, CNCPs and PFEs must submit their previous (January to December) year's data on fishing activities and the impacts of fishing. A proposal for the format of annual catch data is provided in Annex 1.8. The Scientific Committee is advised that Australia could not provide data for the previous year until the 30th April.

c) To aid the SIOFA secretariat the format Annexes 3.1 - 3.3 provide a format for data submission.

d) The Scientific Committee should consider that non-target species key groups include marine mammals, marine reptiles, seabirds, and some sharks. Data collection should be considered for 'other species of concern' such as those outlined in Appendix 1 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention) and Appendix 1 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

2. Observer Data

a) Implementation of Observer Programmes

Australia proposes that national observer programmes endeavour to collect in accordance with the information provided in Annexes 2.1 through to 2.11:

I. Vessel information, effort and catch data for all fisheries and fished species in the Agreement Area, including target, non-target and associated and dependent species.

II. Biological or other data and information relevant to the management of fishery resources in the Agreement Area, as specified in these standards, or as identified from time to time by the Scientific Committee or through processes identified by the Meeting of the Parties.

III. Relevant scientific information related to the implementation of the provisions of the conservation and management measures adopted by the Meeting of the Parties.

b) Australia proposes that observer data for the previous Calendar year (January to December) be submitted to the Secretariat of the SIOFA on the same date that is set for the submission of annual catch data.

c) Australia proposes that observer implementation reports should be provided annually and include sections covering: observer training, programme design and coverage, type of data collected, and any problems encountered during the year.

3. Vessel Monitoring System data

a) Australia proposes that Contracting Parties, CNCPs and PFEs develop and implement Vessel Monitoring Systems to:

I. Ensure that all of their vessels fishing in the Agreement Area are fitted with fully operational automatic location communicator (ALC) reporting back to the flag state.

II. Ensure that ALC on their vessels remain operational, and report in accordance with this standard, at all times and in all areas while operational in the Agreement Area.

III. Maintain a record of all vessel position information reported while these vessels are operational in the Agreement Area, such that this information may be used to document vessel activity in the Agreement Area, and to validate fishing position information provided by those vessels.

b) Australia proposes that VMS position reports be transmitted from a vessel:

I. at least once every 15 minutes if fishing using trawling methods or if operating within 20nm of an exclusive economic zone boundary;

II. at least once every hour in other circumstances.

c) Australia proposes that the Scientific Committee determine the minimum accuracy that data should be reported under normal satellite navigation operating conditions. SPRFMO requires 500m for scientific purposes but notes that for compliance purposes greater accuracy may be required for compliance matters.

4. Historical data

Australia proposes that historical data (pre-2015) on fishing activities in the Agreement Area be provided to the Secretariat by 2017 to facilitate effective stock assessment. The Scientific Committee should agree on a year that all parties should provide historical data from (e.g.1992).

Australia also encourages Contracting Parties, CNCPs and PFEs to provide historical data for species caught in national waters that are also targeted in the Agreement Area; as well as the provision of historical vessel data.

5. Data verification

Australia recommends that Contracting Parties, CNCPs and PFEs implement, if they have not already done so, data verification mechanisms such as:

1) Position verification through vessel monitoring systems;

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

3) Vessel trip, landing and transshipment reports; and

4) Port sampling

Australia recommends that Contracting Parties, CNCPs and PFEs be required to comment on their data verification system in their national report.

6. Data exchange

Australia proposes that all Contracting Parties, CNCPs and PFEs report all data proposed in this paper to the Secretariat in accordance with the specifications and format described in Annexes 3.1-3.3.

It is also recommended that Contracting Parties, CNCPs and PFEs submit National Reports to the Scientific Committee on an annual basis in order to keep the Scientific Committee informed, in a concise format, of their fishing, research and management activities over the previous year.

Such annual reports are not intended to replace data submissions under any standards agreed by the Meeting of the Parties for collection, reporting, verification and exchange of data, or submission of detailed scientific papers.

7. Maintenance of confidentiality

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

a) Australia recommends that the following data be considered "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) or national policies;

   II. Data for vessels including 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) Australia proposes that the Secretariat compile and disseminate "public domain" data through appropriate mechanisms, including the SIOFA website once developed.

c) Australia proposes that the Secretariat be asked to operate comprehensive and robust processes to maintain the confidentiality of the non-public domain data that Contracting Parties, CNCPs and PFEs provide to it. These processes should be based on the ISO/IEC27002:2005 (updates ISO/IEC 17799:2005) international standard for information security management[1]. SIOFA specific data security standards can be developed over time if necessary.

d) Australia proposes that the Secretariat be asked to compile and disseminate to Contracting Parties, CNCPs and PFEs or their designates non-public domain data (being any data not described in above as "public domain" data):

[1] www.iso.org/iso/en/prods-services/popstds/informationsecurity.html

I. In response to a written request from the Meeting of the Parties, for the purposes documented by the Meeting of the Parties; and

II. In the absence of a written request from the Meeting of the Parties - only with the authorization of the Participant(s) that originally provided that data.

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

3 Annexes

Annex 1.1 Standard for trawl fishing activity data

1) **Data shall be collected on an un-aggregated (tow by tow) basis.**

2) **The following fields of data are to be collected:**

- Vessel flag
- Vessel name
- Vessel call sign
- Registration number of vessel
- Lloyd's/ IMO Number (if allocated)
- Vessel size: Gross Tonnage – GT (to be provided as the preferred unit of tonnage), Gross register tonnage – GRT (to be provided if GT not available; may also be provided in addition to GT)
- Name of observer
- Name of person filling in the data
- Email address of person responsible for data enquiries

Weight Conversion Factor

- Species
- Processing type
- Conversion factor = live weight/processed weight

Fine-scale data

1) Haul Identification

- Intended Target species (FAO species code)
- Type of fishing (C)ommercial; (R)esearch fishing; (S)urvey data
- FAO Area[2]
- Trawl number

2) Trawl Gear

- Type of fishing gear
- Mesh size (mm)
- Trawl technique
- Type of trawl, bottom or mid-water
- Type of trawl: (S)ingle, (D)ouble or (T)riple

[2] FAO statistical area codes

- Net ID

3) Set and Haul Details (Complete for every haul, including those where no fish were taken)

- Time zone (UTC +/– hours)

Start fishing

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- Bottom depth (m)
- Average Fishing / gear depth (m)

End fishing

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- Bottom depth (m)
- Average Fishing / gear depth (m)

4) Catch – Complete for every haul - Report all target and by-catch species

- If target species not caught, enter '0'
- If there is no by-catch, enter '0'

Species Retained

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

Species Discarded

- An estimation of the amount of living marine resources discarded by species if possible in live weight (kg)

5) Incidental Catch (Complete for every haul)

- If there is no incidental catch, enter '0'
- Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y,N,U)
- For each species

- Species name
- Number alive
- Number dead or injured

6) Comments

Annex 1.2. Standard for longlining fishing activity data

1) **Data shall be collected on an un-aggregated (set by set) basis.**

2) **The following fields of data are to be collected:**

- Vessel flag
- Vessel name
- Vessel call sign
- Registration number of vessel
- Lloyd's/ IMO Number (if allocated)
- Vessel size: Gross Tonnage – GT (to be provided as the preferred unit of tonnage), Gross register tonnage – GRT (to be provided if GT not available; may also be provided in addition to GT)
- Name of observer
- Name of person filling in the data
- Email address of person responsible for data enquiries

Weight Conversion Factors

- Species
- Processing type
- Conversion factor = live weight/processed weight

Fine-scale data

1) Haul Identification

- Intended target species (FAO species code)
- Type of fishing (C)ommercial; (R)esearch fishing*; (S)urvey data
- FAO Area[2]
- Haul number

2) Longline Gear - for exploratory fisheries only gear notified can be used

- Type of longline
- Type of line
- Type of bait
- Hook size (mm)
- Hook code or make
- Length of line (m)
- Number of hooks set
- Length of longline or number of hooks lost
- Trotline details - Complete only when trotline has been used

Delete

- Total number of hooks per shot
- Total line length (m)

3) Set and Haul Details – Complete for every haul, including those where no fish were taken

- Time zone (UTC +/– hours)

Start setting

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- Fishing depth (m)

End setting

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- Fishing depth (m)

Start hauling

- Date (YYYY.MM.DD)
- Time (HH:mm)

End hauling

- Date (YYYY.MM.DD)
- Time (HH:mm)

4) Catch – Complete for every haul - Report ALL target and by-catch species

- If target species not caught, enter '0'
- If there is no by-catch, enter '0'

Species Retained

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

Species Discarded

- An estimation of the amount of living marine resources discarded by species if possible in live weight (kg)

5) Incidental Catch – Complete for every haul

- If there is no incidental catch, enter '0'
- Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y,N,U)
- For each species
    - Species name
    - Number alive
    - Number dead or injured

6) Comments

Annex 1.3. Standard for trapping/potting fishing activity data

1) **Data shall be collected on an un-aggregated (set by set) basis**

2) **The following fields of data are to be collected:**

- Date of preparation
- Vessel flag
- Vessel name
- Vessel call sign
- Registration number of vessel
- Lloyd's / IMO Number (if allocated)
- Vessel size: Gross Tonnage – GT (to be provided as the preferred unit of tonnage), Gross register tonnage – GRT (to be provided if GT not available; may also be provided in addition to GT)
- Name of observer
- Name of person filling in the data
- Email address of person responsible for data enquiries

Weight Conversion Factors

- Species
- Processing type
- Conversion factor = live weight/processed weight

Fine scale data

1) Haul Identification

- Intended target species (FAO species code)
- Type of fishing (C)ommercial; (R)esearch fishing*; (S)urvey data
- FAO area[2]
- Haul number

2) Fishing Gear (data to be collected for each pot type on board the vessel used in fishing operations)

- Pot type
- Number set
- Number lost
- Type of bait

3) Set and Haul Details – Complete for every haul, including those where no catch was taken

- Time zone (UTC +/– hours)

Start setting

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- Fishing depth (m)

End hauling

- Date (YYYY.MM.DD)
- Time (HH:mm)

4) Catch – Complete for every haul - Report ALL target and by-catch species

- If target species not caught, enter '0'
- If there is no by-catch, enter '0'

Species Retained

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

Species Discarded

- An estimation of the amount of living marine resources discarded by species if possible in live weight (kg)

5) Incidental Catch – Complete for every haul

- If there is no incidental catch, enter '0'
- Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y,N,U)
- For each species
    - Species name
    - Number alive
    - Number dead or injured

6) Comments

Annex 1.4. Standard for dahn/drop lining fishing activity data

1) **Data shall be collected on an un-aggregated (set by set) basis.**

2) **The following fields of data are to be collected:**

- Vessel flag
- Vessel name
- Vessel call sign
- Registration number of vessel
- Lloyd's/ IMO Number (if allocated)
- Vessel size: Gross Tonnage – GT (to be provided as the preferred unit of tonnage), Gross register tonnage – GRT (to be provided if GT not available; may also be provided in addition to GT)
- Name of observer
- Name of person filling in the data
- Email address of person responsible for data enquiries

Weight Conversion Factors

- Species
- Processing type
- Conversion factor = live weight/processed weight

Fine-scale data

1) Haul Identification

- Intended target species (FAO species code)
- Type of fishing (C)ommercial; (R)esearch fishing*; (S)urvey data
- FAO area[2]
- Haul number

2) Set and Haul Details – Complete for every haul, including those where no fish were taken

- Time zone (UTC +/– hours)

Start setting

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)

- Fishing depth at start
- Fishing depth at finish
- Total number of hooks in the set
- Number of hooks lost
- Type of hooks used
- Type of leader used
- Total number of line lifts in the set
- Type of bait used

3) Catch – Complete for every haul - Report ALL target and by-catch species

- If target species not caught, enter '0'
- If there is no by-catch, enter '0'

Species Retained

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

Species Discarded

- An estimation of the amount of living marine resources discarded by species if possible in live weight (kg)

4) Incidental Catch – Complete for every haul

- If there is no incidental catch, enter '0'
- Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y,N,U)
- For each species
    - Species name
    - Number alive
    - Number dead or injured

5) Comments

Annex 1.5. Standard for gill netting fishing activity data

1) **Data shall be collected on an un-aggregated (tow by tow) basis.**

2) **The following fields of data are to be collected:**

- Vessel flag
- Vessel name
- Vessel call sign
- Registration number of vessel
- Lloyd's/ IMO Number (if allocated)
- Vessel size: Gross Tonnage – GT (to be provided as the preferred unit of tonnage), Gross register tonnage – GRT (to be provided if GT not available; may also be provided in addition to GT)
- Name of observer
- Name of person filling in the data
- Email address of person responsible for data enquiries

Weight Conversion Factor

- Species
- Processing type
- Conversion factor = live weight/processed weight

Fine-scale data

1) Haul Identification

- Intended target species (FAO species code)
- Type of fishing (C)ommercial; (R)esearch fishing*; (S)urvey data
- FAO area[2]
- Haul number

2) Gear

- Gillnet type
- Mesh size (mm)
- Gillnet length (m)
- Gillnet depth (number of meshes in a net drop)

3) Set and Haul Details (Complete for every haul, including those where no fish were taken)

- Time zone (UTC +/– hours)

Net deployed

- Date (YYYY.MM.DD)

- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- Gillnet length
- Gillnet depth/fishing depth (number of meshes in a net drop)

Net retrieved

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)

4) Catch – Complete for every haul - Report ALL target and by-catch species

- If target species not caught, enter '0'
- If there is no by-catch, enter '0'

Species Retained

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

Species Discarded

- An estimation of the amount of living marine resources discarded by species if possible in live weight (kg)

5) Incidental Catch (Complete for every haul)

- If there is no incidental catch, enter '0'
- Were any marine mammals, seabirds, reptiles or other species of concern caught? (Yes/No/Unknown – Y,N,U)
- For each species
  - Species name
  - Number alive
  - Number dead or injured

6) Comments

Annex 1.6. Standard for Landings Data: Fishing and Reefer Vessels

Proposed data collection requirements for harvested non-highly migratory fishery resources Agreement Area

1) **Collect data on an individual landings basis**

2) **Collect the following fields of data:**

- Name of vessel
- Current vessel flag
- Registration number of vessel
- International radio call sign (if any)
- Lloyd's / IMO number (if allocated)
- Date entered Agreement Area
- Date exited Agreement Area
- Landing date
- Area catch taken (FAO area[2])
- Country of Landing (standard ISO 3-alpha country codes)
- Port/ Point of Landing
- Landed state[3] by species (FAO species code)
- Landed (live) weight by species
- Containers – Type by species (if applicable)
- Containers – Number by species (if applicable)
- Containers – Total Content weight for all containers by species (if applicable)
- Port of previous landing
- Date of arrival at previous port Verification (if applicable):
- Name of observer
- Authority

[3] 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.

Proposed data collection requirements for reefer vessels transporting non-highly migratory fishery resources caught in the Agreement Area

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

2) **Collect the following fields of data:**

Vessel

- Name of vessel.
- Current flag state.
- Registration number of vessel
- Radio call sign (If any).
- IMO number/Lloyd number (if allocated).
- Name of charter party or owner.

General Information on the unloading (landing)

- Country of landing (using 3 alpha ISO codes).
- Port/point of landing.
- Landing date.
- Port of previous destination if in Agreement Area.

Landing description split by species, for each species

- Landed state[3].
- Containers - Type.
- Containers – Number.
- Containers – Total Content weight for all containers.

Annex 1.7. Standard for Transhipment Data

Proposed data collection requirement for transshipments

1) Collect the following fields of data:

Details of transshipping vessel (delivering)

- Name of vessel.
- Registration number.
- Radio call sign.
- Vessel flag state.
- IMO number/ IHS Fairplay number (if allocated).
- Master of transshipping vessel.

Details of Reefer Vessel (receiving)

- Name of vessel.
- Registration number.
- Radio call sign.
- Vessel flag state.
- IMO number/ IHS Fairplay number (if allocated).
- Master of reefer vessel.

Transhipment operation

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

Verification (if applicable)

- Name of observer
- Authority

Annex 1.8. Standard for Annual Catch Data

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

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

(a) Calendar year

(b) FAO Statistical Area (e.g. FAO87)

(c) Species/ group name (e.g. orange roughy)

(d) Species/ group code (FAO 3-alpha code19, e.g. ORY)

(e) Annual catch total – tonnes raised to 'live' weight

Annex 2.1. Standard for Observer Data - Vessel & Observer Data to be collected for trip

Australia proposes that the following vessel data be collected for each observed fishing trip:

- Trip Number
- Cruise details (start and end dates – YYYY.MM.DD)
- Date report is generated (UTC)
- Current vessel flag. (ISO 3-apha)
- Previous flag (if any) (ISO 3-apha)
- Name of vessel
- Owner/Charterer
- Name of the Captain
- Name of the Fishing Master
- Number of Crew
- Registration number
- International radio call sign (if any)
- Lloyd's / IMO number (if allocated)
- Previous Names (if known).
- Port of registry (UNLOCODE)
- Port of Landing (UNLOCODE)
- Type of vessel (use appropriate ISSCFV codes, Annex 3.3)
- Type of fishing method(s) (use appropriate ISSCFG codes, Annex 3.2)
- Length (m)
- Beam (m).
- Gross Tonnage – GT (to be provided as the preferred unit of tonnage), Gross register tonnage – GRT (to be provided if GT not available; may also be provided in addition to GT)
- Power of main engine(s) (kilowatts)
- Hold capacity (cubic metres)
- Fish Meal Hold Capacity (m3)
- Other Hold Capacity (m3)
- Net monitoring cable used (Yes/No)
- 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.
- Comments

The following observer data shall be collected for each observed fishing trip:

- Observer name
- Nationality (ISO 3-apha)
- Employing organisation
- Contact name in organisation
- Address/email/fax
- Boarding location (UNLOCODE, if applicable or lat/long)
- Boarding Date (UTC:YYYY.MM.DD)
- Disembarkation location (UNLOCODE, if applicable or lat/long)
- Disembarkation date (UTC:YYYY.MM.DD)
- Time Zone (UTC +-)

Annex 2.2. Catch & Effort Data to be collected for trawl fishing activity

Australia proposes that data be collected on an un-aggregated (tow by tow) basis for all observed trawls.

The following data should be collected for each observed trawl tow:

1) Gear details

- Net ID
- Net type (ISSFCV)
- Headrope length (m)
- Groundrope length (m)
- Bobbin diameter (cm)
- Otterboard to wing length (m)
- Horizontal Opening (m)
- Vertical Opening (m)

Codend mesh

- Mesh size (cm), codend circumference (cm), Orientation
- Mesh type (diamond, square, etc)

Otterboard

- Type, weight (kg)

Net design

- Net design description including make, model etc.

2) Trawl details

- Trawl Number
- Gear
- Trawl type: Research or Commercial (R/C)
- Observed (Yes/No)
- Target Species (FAO species code)
- Date Start (YYYY.MM.DD)
- Date Finish (YYYY.MM.DD)
- Time net deployed (hh:mm)
- Time net retrieved (hh:mm)

Start fishing

- Time (hh:mm)

- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Trawl Depth (m)
- Bottom Depth (m)

End fishing

- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Trawl Depth (m)
- Bottom Depth (m)

Other

- Offal discharged during shooting (Y/N)
- Offal discharged during hauling (Y/N)
- Trawl speed (knots)
- Horizontal opening (m)
- Total catch (kg)

3) Observed catch composition

- Observer ID
- Was Haul observed for fish/invertebrate by-catch (Y/N):
- Record the total weight of all sub-samples for this shot (kg):

Species (data shall be collected for each observed species)

- FAO species code
- Total retained catch weight (kg)
- Total discarded catch weight (kg)

Record any bycatch mitigation measures employed:

- Were bird scaring (tori) lines in use? (Yes/No)
- Were bird bafflers in use? (Yes/No)

4) Trawl warp strike

Observers shall monitor the trawl warp for 15 minutes immediately after the net has been deployed.

- Trawl number
- Observer name
- Start observation time (hh:mm)
- End observation time (hh:mm)

Number of heavy warp strikes (record for each species listed below)

Albatross

- Air
- Water
- Sinker

Giant Petrels

- Air
- Water
- Sinker

White chinned petrels

- Air
- Water
- Sinker

Other petrels

- Air
- Water
- Sinker

Seabird abundance observation

- Seabirds present in observation area (y/n)
- Estimated numbers of abundance (by species)

Annex 2.3. Catch & Effort Data to be collected for longlining fishing activity

Australia proposes that data be collected on an un-aggregated (set by set) basis for all observed longline sets.

The following fields of data should be collected for each set:

Fishing Description

1) **Longline Description**

- Longline Type (FFSSCV)
- Period in which the gear was used (YYYY.MM.DD)
- Start and end date (YYYY.MM.DD)
- Target Species (FAO species code)

Main Line

- Material
- Diameter (mm)
- Integrated Wt (g/m)

Branch Lines

- Material
- Length (M)
- Spacing (m)

Hooks

- Type
- Make
- Total length (mm)
- Shank (mm)
- Gape (mm)
- Throat (mm)
- Front length (mm)
- Usual setting position
- Line off bottom (m)
- Hooks off bottom (m)
- Method of baiting (manual/automatic)
- Automatic baiting equipment (make and model)

Hook sinkers

- Size (g)
- Position from hook (mm)
- Offal dumping position (port, starboard, stern)
- longline setting position (port, starboard, stern)
- Offal dumping during hauling (never, occasionally, always)
- Propeller rotation direction (clockwise/anti-clockwise)

Detail the weight and distance between the line weights for the longline system used

- Single (Auto) Line (kg:m)
- Double (Spanish) Line (kg:m)
- Trotline (vertical droppers/trots attached to a mainline) (kg:m)

2) General Streamer Line Description

- Vessel equipped with a streamer line (y/n)
- Number of streamer lines regularly set
- Streamer line position (port, starboard, stern)
- Streamer line length (m)
- Streamer length min/max (m)
- Attached height above water (m)
- Distance between streamers (m)
- Number of streamers
- Streamer design (single or paired)
- Aerial extent of line (m)
- Method used to assess aerial extent
- Streamer material
- Streamer line diameter (mm)
- Streamer colours
- Streamer line over bait entry position? (y/n/u)
- Distance from stern to bait entry point (m)
- Towed object (Y/N)
- Horizontal distance from bait entry point to streamer line (m)

3) Daily setting observations

- Set Number (as referenced in catch and effort log)
- Set Type: Research or Commercial (R/C)
- Longline Type Code (FSSCV)

- Trotline cetacean exclusion device used (Y/N)
- Date of observation (dd/mm/yy)

Setting information

- Vessel setting speed (knots)
- Number sets unobserved since last set

Start setting

- Date (dd/mm/yy)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Bottom Depth (m)
- Total length of longline set (km).
- Total number of hooks for the set.

End setting

- Date (YYYY.MM.DD)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Bottom Depth (m)

Observation No

- Start date (YYYY.MM.DD)
- Start time (hh:mm)
- End date (YYYY.MM.DD)
- End time (hh:mm)

Details of Longline Setting

- Main line length (m)
- Number of hooks set
- Number of Baskets/Magazines Set
- Number of hooks per Basket/Magazine
- Percentage hooks baited

- Distance between branches (m)
- Distance of hooks off bottom (m)
- Bait species (FAO species code)
- Deck lights during setting (On, Off)
- Streamer lines used (Yes, No)
- Number of streamer lines used
- Offal dumping during setting (Yes, No)
- Bait entry position (Port, Starboard, Stern)

4) Daily hauling observations

- Set number
- Date of observation (YYYY.MM.DD)

Hauling Information

- Number of hooks observed for seabird and fish by-catch (tally period)
- Offal dumped during hauling (Yes / No)

Start hauling

- Date (YYYY.MM.DD)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Bottom Depth (m)

End hauling

- Date (YYYY.MM.DD)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Bottom Depth (m)

Observation No

- Start date (YYYY.MM.DD)
- Start time (hh:mm)
- End date (YYYY.MM.DD)

- End time (hh:mm)

Gear lost

- Number of sections lost
- Number of hooks lost that were attached to lost sections of the longline
- Number of other hooks lost (excluding hooks attached to lost sections)

Observed catch composition

- Observer ID
- Was Haul observed for fish/invertebrate by-catch (Y/N):
- Estimate percentage of the haul observed for by-catch (%)

Species (data shall be collected for each observed species)

- Species code (FAO species code)
- Total retained catch weight (kg)
- Total discarded catch weight (kg)

Species Retained

- observed number retained
- observed number retained with tags

Species Discarded

- Observed number discarded
- Observed number discarded dead
- Observed number discarded alive

Species Lost

- Observed number lost/dropped off at surface

Annex 2.4. Catch & Effort Data to be collected for trapping/potting fishing activity

Australia proposes that data be collected on an un-aggregated (set by set) basis for all observed longline sets.

The following fields of data should be collected for each set:

1) **Gear type**

- pot type (with drawing)
- mesh size (mm)

Funnel position

- orientation
- aperture (cm)
- number of chambers

Escape port present (y/n)

- dimensions (cm) of escape port

2) **Processing Details and Conversion Factors (CF)**

- Haul Number
- Observer name
- Species Code (FAO species code)
- Processing Code
- Length Range
- Min
- Max
- Number of individuals
- Live Weight (kg)
- Processed Weight (kg)
- Grade
- Conversion Factor

3) **Set and haul details**

- Set Number
- Date of observation (YYYY.MM.DD)
- Set Type: Research or Commercial (R/C)
- Target species (FAO species code)
- Offal dumped during setting (Yes / No)

- Offal dumped during hauling (Yes / No)

Start setting

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- bottom depth (m)

End setting

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- bottom depth (m)

Start hauling

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- bottom depth (m)

End hauling

- Date (YYYY.MM.DD)
- Time (HH:mm)
- Latitude (-DD for south)
- Latitude minutes and fraction of minutes (MM.mm)
- Longitude (DD for east or -DD for west)
- Longitude minutes and fraction of minutes (MM.mm)
- bottom depth (m)

Gear Details

- Length of line (m)
- Type of line
- Pot spacing (m)
- Bait type

Setting

- number of pots set
- number of pots observed

Hauling

- number of pots hauled
- number of pots observed

4) Observed interactions with birds or marine mammals

- Species Code (FAO species code)

Setting

- Abundance (500m radius)
- Gear interaction (y/n)

Hauling

- Abundance (500m radius)
- Gear interaction (y/n)

5) Observed catch composition

- Observer name
- Was Haul observed for fish/invertebrate by-catch (Y/N):
- Estimate percentage of the haul observed for by-catch (%):

Number of pots observed for by-catch:

- Species Code (FAO species code)
- total retained catch weight (kg)
- total discarded catch weight (kg)

Species Retained

- observed number retained
- observed number retained with tags

Species Discarded

- observed number discarded
- observed number discarded dead

- observed number discarded alive

Species Lost

- observed number lost/dropped off at surface

Annex 2.5. Catch & Effort Data to be collected for dahn/drop lining fishing activity

Australia proposes that data be collected on an un-aggregated (set by set) basis for all observed longline sets.

The following fields of data should be collected for each set:

1) **Dahn/Dropline Description**

- Line Type
- Period in which the gear was used (dd/mm/yy) Start and end date
- Target species (FAO species code)

Main Line

- Material
- Diameter (mm)
- Integrated Wt (g/m)

Hooks

- Type
- Make
- Total length (mm)
- Shank (mm)
- Gape (mm)
- Throat (mm)
- Front length (mm)
- Usual setting position
- Line off bottom (m)
- Hooks off bottom (m)
- Method of baiting (manual/automatic)
- Automatic baiting equipment (make and model)

Offal

- Offal dumping position (port, starboard, stern)
- offal dumping during hauling (never, occasionally, always)
- Propeller rotation direction (clockwise/anti-clockwise)

2) **General Streamer Line Description**

- Vessel equipped with a streamer line (y/n)
- Number of streamer lines regularly set

- Streamer line position (port, starboard, stern)
- Streamer line length (m)
- Streamer length min/max (m)
- Attached height above water (m)
- Distance between streamers (m)
- Number of streamers
- Streamer design (single or paired)
- Ariel extent of line (m)
- Method used to assess aerial extent
- Streamer material
- Streamer line diametre (mm)
- Streamer colours
- Streamer line over bait entry position? (y/n/u)
- Distance from stern to bait entry point (m)
- Horizontal distance from bait entry point to streamer line (m)

Details of Dahn/Dropline Setting

- Date (dd/mm/yy)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Main line length (m)
- Number of hooks set
- Percentage hooks baited
- Distance between branches/snoods (m)
- Distance of hooks off bottom (m)
- Bait species
- Bait size
- Bait proportion
- Deck lights during setting (On, Off)
- Streamer lines used (Yes, No)
- Number of streamer lines used
- Offal dumping during setting (Yes, No)
- Daylight period

- Moonlight
- Bait entry position (Port, Starboard, Stern)
- Vessel setting speed (knots)

End setting

- Date (YYYY.MM.DD)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Bottom Depth (m)

Start hauling

- Date (YYYY.MM.DD)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Bottom Depth (m)

End hauling

- Date (YYYY.MM.DD)
- Time (hh:mm)
- Latitude degrees (-DD)
- Latitude minutes (MM.mm)
- Longitude degrees (DD)
- Longitude minutes (MM.mm)
- Bottom Depth (m)

Gear lost

- Number of sections lost
- Number of hooks lost that were attached to lost sections of the dahn/dropline
- Number of other hooks lost (excluding hooks attached to lost sections)

Observed catch composition

- Observer ID
- Was Haul observed for fish/invertebrate by-catch (Y/N):

- Estimate percentage of the haul observed for by-catch (%)

Species (data shall be collected for each observed species)

- Species code (FAO species code)
- total retained catch weight (kg)
- total discarded catch weight (kg)

Species Retained

- observed number retained
- observed number retained with tags

Species Discarded

- observed number discarded
- observed number discarded dead
- observed number discarded alive

Species Lost

- observed number lost/dropped off at surface

Annex 2.6. Fishing in Association with Vulnerable Marine Ecosystems (VME)

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

1) **General information**

- Observers name
- Vessel name
- Date (YYYY.MM.DD)
- Trip number
- Set number
- Position (latitude/longitude)
- Species Code (FAO species code)

2) **VME location**

- Start and end positions of all gear deployments and/or observations. (Lat/long)
- Depth(s) fished (m)

3) **Fishing Gear**

- Indicate fishing gears used at each location.

4) **VME Taxa**

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.

5) **Collect representative biological samples from the entire VME catch. (Biological samples shall be collected and frozen when requested by the scientific authority in a Contracting Party). For some coral species that are under the CITES list photographs should be taken.**

Annex 2.7. Length-Frequency Data to Be Collected

Australia recommends that Representative and randomly sampled length-frequency data be collected for the target species (FAO species code) 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) shall 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.

Annex 2.8. Biological Sampling to be conducted

1) **Australia proposes that the following biological data be collected for representative samples of the main target species (FAO species code) 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.

   c) Weight (kg)

   d) Sex (male, female, immature, unsexed)

   e) Maturity stage

   f) Gonad weight (g)

2) **Australia proposes that observers be required to collect tissue, otolith and/or stomach samples in accordance with any research programmes developed by the Scientific Committee.**

3) **Observers should be briefed and provided with documented length-frequency and biological sampling protocols, where appropriate, and priorities for the above sampling specific to each observer trip.**

Length-frequency and biological sampling protocols

1) **Commercial Sampling Protocol**

Fish species other than skates, rays and sharks:

- fork length shall be measured to the nearest cm for fish which attain a maximum length greater than 40cm fork length
- fork length shall be measured to the nearest mm for fish which attain a maximum length less than 40cm fork length;

Skates and rays:

- maximum disk width shall be measured

Sharks

- Appropriate length measurement to be used should be selected for each species. As a default, total length should be measured.

2) **Proposed Scientific Sampling Protocols**

- For scientific sampling of species, length measurements should be made at a finer resolution than specified above.

3) **Guidelines for data collection (suggested quantities).**

Species (FAO species Code)

Length:

- Total length
- Number samples/set

Maturity:

- Gonad stages
- Number samples/set

GSI:

- Gonad weight
- Number samples/set

Length-Weight:

- Individual weight
- Number samples/set

Sex:

- Male and female
- Number samples/set

Age:

- Otoliths
- Number samples/set

Australia proposes that these data be collected and submitted by scientific observers (using observer data forms) when specified. Where no such arrangement is in place, Australia suggests that fine-scale biological data be collected by Flag States on a haul-by-haul basis

Annex 2.9. Data to be collected on Incidental Captures of seabirds, mammals, turtles and other species of concern

1) **Australia proposes that the following data be collected for all seabirds, mammals, 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) Estimated species abundance around fishing vessel.

   c) Species interactions with fishing gears.

   d) Count of the number of each species caught per tow or set.

   e) Fate of bycatch animal(s) (retained or released/discarded).

   f) If released, life status (vigorous, alive, lethargic, injured, dead) upon release.

   g) If injured, what was the cause of injury?

   h) If dead, then collect information or samples[4] 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.

   i) Record the type of interaction (hook/line entanglement/warp strike/net capture/other) if other, describe.

2) **Australia proposes that the sex of each individual for taxa where this is feasible from external observation, e.g. pinnipeds, small cetaceans or Elasmobranchii species of concern be provided.**

3) **Australia proposes that Contracting Parties, CNCPs and PFEs identify any circumstances or actions that may have contributed to the bycatch event? (E.g. tori line tangle, high levels of bait loss)**

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

Annex 2.10. Data to be collected for all Tag Recoveries

Australia proposes that the following data 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 shall be collected.

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).

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)

Annex 2.11. Hierarchies for Observer Data Collection

Recognising that observers may not be able to collect all of the data described in these standards on each trip, Australia proposes that a hierarchy of priorities be implemented for the collection of observer data. Trip-specific or programme-specific observer task priorities may be developed in response to specific research programme requirements.

Australia proposes that in the absence of trip- or programme-specific priorities, the following generalised priorities be followed by observers:

Fishing Operation Information

- All vessel and tow / set / effort information.

Reporting of Catches

- Record time, weight of catch sampled versus total catch or effort (e.g. number of hooks), and total numbers of each species caught.
- Identification and counts of seabirds, mammals, reptiles (e.g. turtles), sensitive benthic species and vulnerable species.
- Record numbers or weights of each species retained or discarded.
- Record instances of depredation, where appropriate.

Biological Sampling

- Check for presence of tags.
- Length-frequency data for Target species (FAO species code).
- Basic biological data (sex, maturity) for Target species (FAO species code).
- Length-frequency data for main by-catch species.
- Otoliths (and stomach samples, if being collected) for Target species (FAO species code).
- Basic biological data for by-catch species.
- Biological samples of by-catch species (if being collected)
- Take photos

Annex 3.1. Specifications for the exchange of data

1) **Australia recommends that Coordinated Universal Time (UTC) 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 - represent 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.

2) **Australia proposes that the following standard be used for the submission of latitudinal/ longitudinal information:**

- Northern latitudes and eastern longitudes should be indicated by the use of [unsigned] 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) **Australia recommends that 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 3.2

c) Types of fishing vessel are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes[7] - Annex 3.3

4) **Australia recommends that the metric units of measure 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 3.2. ISSCFG Codes – International Standard Statistical Classification of Fishing Gear (ISSCFG) (29 July 1980)

Gear Categories Abbreviation Code	Standard Abbreviations	ISSCFG
SURROUNDING NETS		**01.1.0**
With purse lines (purse seines)	PS	01.1.1
- one boat operated purse seines	PS1	01.1.2
- two boats operated purse seines	PS2	01.1.3
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[8]	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

Deleted:

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

Gear Categories Abbreviation Code	Standard Abbreviations	ISSCFG
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**
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	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

[9] Including jigging lines

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

Gear Categories Abbreviation Code	Standard Abbreviations	ISSCFG
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**

[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 3.3. 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**
	Pot vessels	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

Vessel Type		Standard Abbreviation	Code
	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
	Tuna motherships	HST	11.3.0
	Motherships for two-boat purse	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.