



Agreement on the Conservation of Albatrosses and Petrels

Second Meeting of Seabird Bycatch Working Group

Hermanus, South Africa, 17 – 18 August 2008

Observer Report - SPRFMO

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Reporting Back after Attending an International Meeting for ACAP

Meeting Title: “Fifth international meeting on the establishment of a South Pacific Regional Fisheries Management Organization”

Meeting Organization: “Ministerio de Relaciones de Exteriores, Comercio e Integración de Ecuador” and the “Comisión Permanente del Pacifico Sur” (CPPS).

Date and Location: Guayaquil, Ecuador, Science Working Group 5-7 March and Plenary Sessions 10-14 March 2008.

Website Address: www.southpacificrfmo.org

Your Name/Affiliation: Dr. Carlos A. Moreno, Universidad Austral de Chile.

Capacity of Attendance: ACAP Observer

Outcome (e.g. summary of relevant discussion, resolution, etc):

SPRFMO is an intergovernmental organisation in the process of being established, led by Australia, Chile and New Zealand. Most of the work undertaken until now has been oriented to establishing SPRFMO as an intergovernmental organisation under UNCLOS. At this meeting 150 individuals from 24 countries and fishery entities, plus 4 intergovernmental observers and 4 observers from NGO's, were in attendance.

The work in the Science working group on this occasion was devoted to establishing data collection standards, a task that ended after the meeting with a document presented by Kelly Denit (USA) via internet. In this minimum standard data collection for observer's and for to create the SPRFMO data base, was included the report of all types of by-catch, in term of yes or no (including seabirds) and in the case of “yes” the frequency and the description of such events for all the types of fishing methods that operate in the area cover by the RFMO (trawlers, longline, purseiners, jiggers and potters and for drop/ dahn lining methods). It was also agreed that all participants in fisheries in the area are to develop, implement and improve the Observer Program to collect vessel information and effort and catch data for all fisheries and fished species in the Area, including target, by-catch and associated and dependent species.

Under this point of view, the incidental mortality problem must gain greater prominence in the near future and ACAP must play a relevant role if its observer is to participate actively in the working groups and in the Plenary, the former being more important.

In terms of the plenary sessions very few advances were observed, because the main

topics under discussion were the adoption of the precautionary approach and the ecosystem approach in the process of establishing catch quotas: Most interventions by delegates from intergovernmental organizations and NGO's suggested that this matter needed to be adopted without discussion because its importance in conservation and sustainability. This part of the discussion was extremely important, because countries and fishing organizations that accept these basic principles in other forums, tried here to avoid their application.

It is thought another two meetings may be required before a consensus is reached on this document.

Outlook for Future ACAP Involvement:

ACAP needs to remain involved, especially to evaluate the importance of the interaction between seabirds and the fleets that fish on the South Pacific high seas. These fleets are currently using fishing methods that we know are a threat for seabirds in other areas.

Recommended Actions for ACAP:

Prepare a review document of the known effects of the different fishing methods in use in the SPRFMO, to be presented to the Data Working group at the next meeting and distributed to all delegations in order to bring attention to data gathering requirements and for use in the training of the Observers from the different participants in the fisheries of the area.

Have relevant papers been forwarded to Secretariat: Yes, "Standards for the collection, reporting, verification and exchange of data" (last draft).

Note: This paper is attached to this report for the information of SBWG members, but will not be discussed in any detail at SBWG-2.

International Consultations on the Establishment of the
South Pacific Regional Fisheries Management Organisation

Standards for the collection, reporting, verification and exchange of data

Updated: 28 April 2008

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

1. Data on fishing activities and the impacts of fishing

Participants are to develop, implement and improve systems to:

- (a) Ensure that data on fishing activities are collected from vessels according to the operational characteristics of each fishing method.
 - (i) For trawling methods, Participants are to collect the data described in annex 1;
 - (ii) For purse seining methods, Participants are to collect the data described in annex 2;
 - (iii) For bottom long lining, methods Participants are to collect the data described in annex 3;
 - (iv) For squid jigging, Participants are to collect the data described in Annex 4.
 - (v) For potting methods, Participants are to collect the data described in Annex 5.
 - (vi) For drop/ dahn lining methods, Participants are to collect the data described in Annex 6.
- (b) Ensure that data to assess the impacts of fishing on non-target and associated or dependant species are collected from vessels.
- (c) Compile data on fishing activities and the impacts of fishing and provide these in a timely manner to the interim Secretariat of the proposed South Pacific Regional Fisheries Management Organisation (SPRFMO). Such data are to be provided in sufficient detail to facilitate effective stock assessment. Participants will provide by the 31st March, their

previous (January to December) year's data on fishing activities and the impacts of fishing.

2. Vessel data

Participants are to:

- (a) Establish a national record of vessels authorized to fish in the Area;
- (b) Collect vessel related data for standardizing fleet composition and vessel fishing power and for converting between different measures of effort in the analysis of catch and effort data. Participants will collect the data described in annex 7;
- (c) Compile vessel data and provide them in a timely manner to the interim Secretariat of the proposed SPRFMO. Participants are to provide data on vessels that they have authorized to fish in the following year, at least 3 months prior to the start of that year. Additionally, Participants are to provide data on vessels that they newly authorize to fish during a year, or when authorizations to fish are revoked during a year, within 1 month of granting or revoking such an authorization.

3. Observer Data

(a) Implementation of Observer Programmes

Participants 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 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 Area, as specified in these standards, or as identified from time to time by the Science Working Group or through processes identified by the Commission.
- iii) To collect relevant scientific information related to the implementation of the provisions of the Interim Measures adopted by the Participants to the negotiations for the formation of a South Pacific RFMO.
- iv) To collect representative data, including length-frequency and biological samples, across the 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 SPRFMO Area should provide the information in Annex 8.

(c) Data Provision

Observer data should be provided to the interim Secretariat of the proposed SPRFMO in a standardised format, to be included in a SPRFMO Observer Database. Specifications and standards for this data submission will be developed by the Interim Secretariat. Until the Interim Secretariat determines a change is needed, observer data will be submitted in Microsoft Excel format. Participants will provide by the 30th September, their previous (January to December) year's data.

(d) Annual Reporting

All SPRFMO participants 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 Data & Information Working Group, the Scientific Working Group or the Commission to evaluate the implementation and effectiveness of observer programmes implemented under this standard.

(e) Maintenance of Confidentiality

The interim Secretariat of the proposed 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 Interim Secretariat is to follow the procedures specified in section 8.

4. Vessel Monitoring System data

(a) Implementation of Vessel Monitoring Systems

Participants are to develop, implement and improve systems to:

- (i) Ensure that all of their vessels fishing in the 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 SPRFMO area.
- (iii) Maintain a record of all vessel position information reported while these vessels are operational in the SPRFMO area, such that this information may be used to document vessel activity in the SPRFMO area, and to validate fishing position information provided by those vessels.

(b) Frequency and Accuracy of VMS Position Reports

Participants are to ensure that:

- (i) VMS position reports are reported by each of their vessels:
 - (1) at least once every 2 hours if fishing using benthic or benthopelagic¹ trawling or if operating within 20nm of an EEZ boundary;
 - (2) at least once every four hours in other circumstances.
- (ii) All VMS Position reports are made in accordance with the specification in paragraph (c) of this standard.
- (iii) Under normal satellite navigation operating conditions, positions derived from the data reported are to be accurate to within 500²m.

(c) Content of VMS Position Reports

Participants are to ensure that all VMS Position Reports made by their vessels include at least the following information:

Category	Data Element	Remarks
Vessel registration	Static unique vessel identifier	For example, country code followed by national vessel registration number
Activity detail	Latitude	Position latitude (decimal degrees, to the nearest 0.01 degree)
Activity detail	Longitude	Position longitude (decimal degrees, to the nearest 0.01 degree)
Message detail	Date	Position date in UTC
Message detail	Time	Position time in UTC

5. Historical data

Participants are to:

- (a) Collate pre-2007 data on fishing activities in the Area and provide these to the interim Secretariat of the proposed SPRFMO by 30th September 2007, in sufficient detail to

¹ Benthopelagic trawling is interpreted here to mean trawling with a mid-water net where the net has a likelihood of coming into contact with the seabed at any time during the trawling operation.

² 500m should be adequate for scientific purposes but for compliance purposes a greater accuracy may be required.

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 interim Secretariat of the proposed SPRFMO by 30th 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 interim Secretariat of the proposed SPRFMO by 30th September 2007, in a format as close as is practical to that described annex 7.

6. Data verification

Participants are to ensure that fishery data are verified through an appropriate system.

Participants 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 transshipment reports; and
- (d) Port sampling.

7. Data exchange

When Participants provide data to the interim Secretariat of the proposed SPRFMO, they will do so in accordance with the specifications and format described in annex 9 of this document.

8. Maintenance of confidentiality

The interim Secretariat of the proposed 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 interim Secretariat is to:

- (a) Compile and disseminate on request the following "public domain" data:
 - (i) Data on fishing activities, aggregated by flag state and calendar year and 5 degree by 5 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 on the number and type of vessels authorized to fish, aggregated by flag state and calendar year;
- (b) Operate comprehensive and robust processes to maintain the confidentiality of the non-public domain data that Participants provide to it. These processes will be based on the ISO/IEC27002:2005 (updates ISO/IEC 17799:2005) international standard for information security management³. SPRFMO specific data security standards will be developed over time;
- (c) Compile and disseminate to Participants or their designates non-public domain data (being any data not described in 8(a)):
- (i) In response to a written request from the collective Parties to the Negotiation, for the purposes documented by those Parties; and
 - (ii) In the absence of a written request from the collective Parties to the Negotiation - only with the authorization of the Participant(s) that originally provided that data.

In the case that an interim Secretariat has not been established, the Convener of the Data and Information Working Group will assume the roles of the interim Secretariat with regard to the Maintenance of Confidentiality.

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

³ www.iso.org/iso/en/prods-services/popstds/informationsecurity.html

Annex 1

Standard for trawl fishing activity data

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
 - (f) Tow start time
 - (g) Tow end date
 - (h) Tow end time
 - (i) Tow start position (1/10th degree resolution)
 - (j) Tow end position (1/10th degree resolution)
 - (k) Intended target species
 - (l) Type of trawl, bottom or mid-water.
 - (m) Type of trawl, single, double or triple.
 - (n) Height of net opening
 - (o) Width of net opening
 - (p) Gear depth at start of fishing
 - (q) Bottom depth at start of fishing
 - (r) Catch retained on board by species in live weight
 - (s) An estimation of the amount of living marine resources discarded by species if possible
 - (t) Were any marine mammals, seabirds or reptiles caught (yes/no)

Annex 2

Standard for purse seine fishing activity data

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
 - (f) Set start time
 - (g) Set end date
 - (h) Set end time
 - (i) Set start position (1/10th degree resolution)
 - (j) Net length
 - (k) Net height
 - (l) Intended target species
 - (m) School association
 - (n) Catch retained on board by species in live weight
 - (o) An estimation of the amount of living marine resources discarded by species if possible
 - (p) Were any marine mammals, seabirds or reptiles caught (yes/no)

Annex 3

Standard for bottom long lining fishing activity data

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
 - (f) Set start time
 - (g) Set end date
 - (h) Set end time
 - (i) Set start position (1/10th degree resolution)
 - (j) Set end position (1/10th degree resolution)
 - (k) Intended target species
 - (l) Number of hooks
 - (m) Bottom depth at start of set
 - (n) Catch retained on board by species in live weight
 - (o) An estimation of the amount of living marine resources discarded by species if possible
 - (p) Were any marine mammals, seabirds or reptiles caught (yes/no)

Annex 4

Standard for squid jigging fishing activity data

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
 - (f) Position at start of drift (1/10th degree resolution)
 - (g) Position at end of drift (1/10th degree resolution)
 - (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) Catch retained on board by species in live weight
 - (q) An estimation of the amount of living marine resources discarded by species if possible
 - (r) Were any marine mammals, seabirds or reptiles caught (Yes/No)

Annex 5

Standard for potting methods fishing activity data

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
 - (f) Set start time
 - (g) Set end date
 - (h) Set end time
 - (i) Start of set position (1/10th degree resolution)
 - (j) End of set position (1/10th degree resolution)
 - (k) Intended target species
 - (l) Depth at start of set
 - (m) Depth at end of set
 - (n) Type of pots
 - (o) Total number of pots set
 - (p) Type of bait used
 - (q) Catch retained by species in live weight
 - (r) An estimate of the amount of living marine resources discarded by species if possible
 - (s) Were any marine mammals, seabirds or reptiles caught (Yes/No)

Annex 6

Standard for drop/dahn lining fishing activity data

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
 - (f) Set start time
 - (g) Set end date
 - (h) Set end time
 - (i) Start of set position (1/10th degree resolution)
 - (j) End of set position (1/10th degree resolution)
 - (k) Intended target species
 - (l) Depth at start of set
 - (m) Depth at end of set
 - (n) Total number of hooks in the set
 - (o) Number of hooks lost
 - (p) Type of hooks used
 - (q) Type of leader used
 - (r) Total number of line lifts in the set
 - (s) Type of bait used
 - (t) Catch retained by species in live weight
 - (u) An estimate of the amount of living marine resources discarded by species if possible
 - (v) Were any marine mammals, seabirds or reptiles caught (Yes/No)

Annex 7

Standard for vessel data

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

2. The following fields of data are to be collected:
 - (a) Current vessel flag
 - (b) Name of vessel
 - (c) Registration number
 - (d) International radio call sign (if any)
 - (e) Lloyd's / IMO number (if allocated)
 - (f) Previous Names (if known)
 - (g) Port of registry
 - (h) Previous flag (if any)
 - (i) Type of vessel
 - (j) Type of fishing method(s)
 - (k) When built
 - (l) Where built
 - (m) Length
 - (n) Moulded depth
 - (o) Beam
 - (p) Gross register tonnage
 - (q) Power of main engine(s)
 - (r) Hold capacity
 - (s) Name of owner(s)
 - (t) Address of owner(s)
 - (u) Name of operator(s)
 - (v) Address of operator(s)

Annex 8
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.

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.
 - l) Type of fishing method(s).
 - m) Length (m).
 - n) Beam (m).
 - o) Gross register tonnage.
 - p) Power of main engine(s) (kilowatts).
 - q) Hold capacity (cubic metres).
 - r) 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.
 - s) 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

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.
 - b) Tow start time (the time gear starts fishing).
 - c) Tow end date.
 - d) Tow end time (the time haul back starts).
 - e) Tow start position (Lat/Lon, 1 minute resolution).
 - f) Tow end position (Lat/Lon, 1 minute resolution).
 - g) Intended target species.
 - h) Type of trawl, bottom or mid-water.
 - i) Type of trawl, single, double or triple.
 - j) Height of net opening.
 - k) Width of net opening.
 - l) Mesh size of the cod-end net (stretched mesh, mm) and mesh type (diamond, square, etc).
 - m) Gear depth (of footrope) at start of fishing.
 - n) Bottom (seabed) depth at start of fishing.
 - o) Catch of all species retained on board, split by species, in live weight (to the nearest kg).
 - p) Record of the numbers by species of all marine mammals, seabirds or reptiles caught.
 - q) Record of 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 discards, split to the lowest known taxon, unless the species is less than 100 kg per tow.
 - s) Record any bycatch mitigation measures employed.

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

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.
 - c) Set start time (the time gear starts fishing).
 - d) Set end date.
 - e) Set end time (the time haul back starts).
 - f) Set start position (Lat/Lon, 1 minute resolution).
 - g) Net length (m).
 - h) Net height (m).
 - i) Net mesh size (stretched mesh, mm) and mesh type (diamond, square, etc)
 - j) Intended target species.
 - k) Type of school and association (FAD, debris, seabirds, surface, sonar target).
 - l) Catch of all species retained on board, split by species, in live weight (to the nearest kg).
 - m) Record of the numbers by species of all marine mammals, seabirds or reptiles caught.
 - n) Estimate of the amount (weight or volume) of remaining marine resources discards, split to the lowest known taxon, unless the species is less than 100 kg per set.
 - o) Record any bycatch mitigation measures employed.

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

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.
 - b) Set start time.
 - c) Set end date.
 - d) Set end time.
 - e) Set start position (Lat/Lon, 1 minute resolution).
 - f) Set end position (Lat/Lon, 1 minute resolution).

- g) Intended target species.
- h) Total length of longline set (km).
- i) Number of hooks for the set.
- j) Bottom (seabed) depth at start of set.
- k) Number of hooks actually observed during the haul.
- l) Catch of all species retained on board, split by species, in live weight (to the nearest kg).
- m) Record of the numbers by species of all marine mammals, seabirds or reptiles caught.
- n) Record of sensitive benthic species in the catch, particularly vulnerable or habitat-forming species such as sponges, sea-fans or corals.
- o) Estimate of the amount (weight or volume) of remaining marine resources discards, split to the lowest known taxon, unless the species is less than 100 kg per set.
- p) Record any bycatch mitigation measures employed.

E. Length-Frequency Data to Be Collected

1. Representative and randomly distributed 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.

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 and whether to the nearest unit or unit below), with record of the type of length measurement used. Measurement precision and type should be determined on a species by species basis.
 - 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 Working Group 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, and reptiles (turtles)

1. The following data are to be collected for all seabirds, mammals, and reptiles (turtles) 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 caught per tow or set.
 - c) Life status (vigorous, alive, lethargic, dead) upon release.
 - d) If dead, then collect adequate information or samples 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.

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 (m³)) of each listed benthic species caught in the tow.
 - c) An overall estimate of the total quantity (weight (kg) or volume (m³)) 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 and whether to the nearest unit or unit below) 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)
 - 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
 - All vessel and tow / set / effort information.

 - b) 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 (turtles), sensitive benthic species and vulnerable species.
 - Record numbers or weights of each species retained or discarded.
 - Record instances of depredation, where appropriate.

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

3. 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, and reptiles (turtles)	2
Other species typically within top 5 in the fishery (such as blue mackerel for pelagic fisheries, and oreos and alphonsino for	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 country 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 9 of the SPRFMO Data Standards.
2. Coordinated Universal Time (UTC) is to be used to describe times.
3. Degrees and minutes 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.
 - b) Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes.
 - c) Types of fishing vessel are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes.
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.

Annex 9
Specifications for the exchange of data

1. Coordinated Universal Time (UTC) is to be used to describe times.
2. Degrees, Minutes and Seconds are to be used to describe locations. Where locations are required to be provided at the 1/10th of a degree resolution, this is to be achieved by rounding to the nearest 6 minutes.
3. The following coding schemes are to be used:
 - (a) Species are to be described using the FAO 3 letter species codes⁴
 - (b) Fishing methods are to be described using the International Standard Classification of Fishing Gear (ISSCFG - 29 July 1980) codes⁵
 - (c) Types of fishing vessel are to be described using the International Standard Classification of Fishery Vessels (ISSCFV) codes⁶
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

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

⁵ <http://www.fao.org/fishery/cwp/handbook/M> - see "Annex M I"

⁶ <http://www.fao.org/fishery/cwp/handbook/L> -see "Annex L.II"