

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

Standards for the Collection, Reporting and Exchange of Observer Data

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

1. Implementation of Observer Programmes

Participants are to develop, implement and improve Observer Programmes to attain the following objectives:

1. To collect representative vessel information, effort and catch data for all fisheries and fished species in the Area, including target, by-catch and associated and dependent species.
2. To collect additional representative 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.
3. 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.

2. Information and Data to be Collected

All national observer programmes operated in the SPRFMO Area in accordance with these standards should be required to collect the information detailed in Annex 1.

3. Data Provision

Observer data should be provided to the SPRFMO Secretariat in a standardised format, to be included in a SPRFMO Observer Database. Specifications and standards for this data submission will be developed by the SPRFMO Interim Secretariat.

4. 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 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.

5. Maintenance of Confidentiality

In response to requests for dissemination of observer data, 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 6 of the SPRFMO “*Standards for the collection, reporting, verification and exchange of data*”.

TYPE AND FORMAT OF OBSERVER DATA TO BE COLLECTED

A. Vessel & Observer Data to be Collected for Each 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).
 - 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.
 - c) Tow end date.
 - d) Tow end time.
 - 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) Estimate of the amount (weight or volume) of all living marine resources discarded, split by species.
- q) Record of the numbers by species of all marine mammals, seabirds or reptiles caught.
- r) Record of sensitive benthic species in the trawl catch, particularly vulnerable or habitat-forming species such as sponges, sea-fans or corals.

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.
 - d) Set end date.
 - e) Set end time.
 - 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) Estimate of the amount (weight or volume) of all living marine resources discarded, split by species.
 - n) Record of the numbers by species of all marine mammals, seabirds or reptiles caught.

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) An estimation of the amount (numbers or weight) of living marine resources discarded, split by species
- n) Record of the numbers by species of all marine mammals, seabirds or reptiles caught.

E. Length-Frequency Data to Be Collected

1. Representative and randomly distributed length-frequency data are to be collected for representative samples of the target species and, time permitting, for other main by-catch species. Length data should be collected at the most precise level possible (cm or mm). Total weight of length-frequency samples should be recorded, and observers may be required to also determine sex of measured fish to generate length-frequency data stratified by sex.
2. The numbers of fish to be measured for each species and distribution of samples across area and month strata should be statistically determined, to ensure that samples are properly representative of species distributions and size ranges.

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 (to the nearest mm or cm), with record of the type of length measurement used.
 - c) Sex (male, female, immature, unsexed)
 - d) Maturity stage (immature, mature, ripe, ripe-running, spent)
2. Observers may be required to collect tissue, otolith and/or stomach samples as part of 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 Protected Species

1. The following data are to be collected for all protected species (seabirds, mammals, reptiles, turtles, etc.) caught in fishing operations:
 - a) Species (identified taxonomically as far as possible, or accompanied by photographs if identification is difficult).
 - b) Count of the number caught per tow or set.
 - c) Life status (vigorous, alive, lethargic, dead) upon release.

- d) If dead, then collect whole specimens (where possible) for onshore identification. Where this is not possible, observers may be required to collect sub-samples of identifying parts, as specified in biological sampling protocols.
- 2. The Scientific Working Group is to develop lists and identification guides of protected species or species of concern to be monitored by observers.

H. Detection of Fishing in Association with Vulnerable Marine Ecosystems

- 1. The Scientific Working Group is to develop a guideline, species list and identification guide for benthic species (e.g. sponges, sea fans, corals) whose presence in a trawl or other bottom gear catch will indicate that fishing occurred in association with a vulnerable marine ecosystem (VME). All observers on trawl or other bottom fishing vessels should be provided with copies of this guideline, species list and ID guide once developed.
- 2. For each observed trawl, the following data are to be collected for all species caught, which appear on the list of vulnerable benthic species:
 - 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 suitable 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:
 - 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)
 - i) Date and time of capture (UTC).
 - j) Location of capture (Lat/Lon, to the nearest 1 minute)
 - k) Animal length / size (to the nearest cm) 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) Monitoring of Catches
 - Record time, proportion of catch (e.g. proportion of trawl landing) or effort (e.g. number of hooks), and total numbers of each species caught.
 - Record numbers or proportions of each species retained or discarded.
 - c) Biological Sampling
 - Length-frequency data for target species.
 - Basic biological data (sex, maturity) for target species.
 - Length-frequency data for main by-catch species.
 - Identification and counts of protected species.
 - Check for presence of tags.
 - 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 monitoring 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
Associated threatened or protected species	2
Other species typically within top 5 in the fishery (such as blue mackerel for pelagic fisheries, and oreos and alphonsino for demersal fisheries)	3
All other species	4

The allocation of observer effort among these activities will depend on the type of operation and setting. The size of sub-samples relative to unobserved quantities (e.g. number of hooks examined for species composition relative to the number of hooks set) should be explicitly recorded under the guidance of member 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 collected in accordance with the same coding specifications as specified in Annex 5 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.