Agreement on the Conservation of Albatrosses and Petrels

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Development of Best Practices for the Collection of Longline Data to Facilitate Research and Analysis to Reduce Bycatch: Draft executive summary from the report of a workshop held at the International Fisheries Observer Conference, November 8, 2004, Sydney, Australia

DRAFT

Development of Best Practices for the Collection of Longline Data to Facilitate Research and Analysis to Reduce Bycatch

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Report of a workshop held at the International Fisheries Observer Conference, November 8, 2004, Sydney, Australia

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Executive Summary

Recent workshops focusing specifically on the reduction of sea turtle, marine mammal, and seabird incidental catch (i.e., bycatch) in fisheries have recommended the need for standardized data collection procedures employed by fisheries observers onboard commercial fishing vessels (Anon. 2003, Donaghue et al. 2003, FAO 2004, FAO and BirdLife International 2004, IATTC 2004, NMFS 2004). However, these reports have lacked sufficient detail regarding what these standardized data collections should be.

The development and implementation of data collection standards for longline fishery observer programs is challenging at many levels. First, there is the lack of detail in the recommendations regarding what data collections need to be standardized. Second, observer programs worldwide have diverse objectives that may make standardization seem unfeasible or unwarranted. For example, if bycatch monitoring is not the primary objective of a given observer program, increasing observer data collection responsibilities regarding seabirds, sea turtles and marine mammals may be seen as infringing on the ability of an observer to collect data for a program's primary objectives. Finally, instituting the use of consistent data fields at the observer program level may impact long-term data series, add to database management costs, and increase time required for observer training. Despite these challenges, there are benefits to standardizing certain aspects of observer data collection procedures for longline fisheries. Consistently collected information could facilitate improved global assessments of the impacts of longline fisheries on bycatch species, while allowing better research and development of gear modifications or changes in fishing practices to reduce bycatch.

To facilitate research and analysis of factors influencing bycatch of marine mammals, sea turtles, and seabirds in longline fisheries, a workshop was organized to develop "best practices" in observer data collections. The workshop was held in conjunction with the International Fisheries Observer Conference, November 8-11, 2004, in Sydney, Australia.

The objectives of the workshop were to:

- Share information on current data collection practices and methodologies (i.e., which variables are collected by observer programs worldwide and how are they collected).

- Solicit information from data users on variables that are critical, preferred, optimal, or not important to facilitate research and analysis to reduce bycatch of protected species[1].
- Identify data not currently being gathered systematically that might facilitate research and analysis to reduce bycatch of protected species.
- Coordinate with observer program staff to understand data collection limitations.
- Recommend best practices for observer data collection in longline fisheries that would facilitate research and analysis to reduce bycatch of protected species, in the form of a prioritized list of variables and consistent procedures
- Establish a network to continue to develop, refine, and implement best practices.

Prior to the workshop, two web-based questionnaires were developed and distributed to observer program managers and data users worldwide. The objectives of the questionnaire were to ensure broad input from researchers and observer program staff that may not be able to attend the workshop, and to provide a base of information from which to focus discussions during the workshop.

At the workshop, participants discussed the need to develop best practices for observer data collections and results of the questionnaires. Table 1 identifies variables that participants recommended be collected systematically in all longline observer programs to aid in bycatch reduction research and analysis.

Table 1. Recommended Minimum Variables to be Collected in All Longline Fisheries

Gear Type Fished	**Category**	**Variables**
All	Temporal	Deploy Date Deploy Start Time Deploy End Time Retrieve Date Retrieve Start Time Retrieve End Time
Pelagic	Spatial	Deploy Begin Latitude Deploy End Latitude Deploy Begin Longitude Deploy End Longitude Retrieve Begin Latitude Retrieve End Latitude Retrieve Begin Longitude Retrieve End Longitude
Demersal[a]		Either Deploy or Retrieve Begin Latitude Either Deploy or Retrieve End Latitude Either Deploy or Retrieve Begin Longitude Either Deploy or Retrieve End Longitude
Pelagic	Physical and Environmental	Sea Surface Temperature Deploy Begin Depth Fished Deploy End Depth Fished Deploy Begin Depth of Bottom Deploy End Depth of Bottom

[1] Although the original objectives of the workshop were to also focus on bycatch of billfish and sharks, these species were not addressed at the workshop due to time constraints and lack of convener expertise.

Gear Type Fished	Category	Variables
Demersal		Sea Surface Temperature Deploy Begin Depth of Bottom Deploy End Depth of Bottom
All	Vessel and Fishing Information	Unique Vessel Identifier Unique Observer Identifier Unique Trip Identifier Total Effort (total number of hooks deployed each set) Target Species Bait Species Bait Condition (frozen, thawed, live) Autobaiter Used? Weight of Added Weight (if present) Direction of Gear Retrieval
All	Gear[b]	Groundline Length Branchline Length Distance between Branchlines Hook Size Hook Type
All	Catch	Total Catch (number and/or weight) Catch by Species (number and/or weight) Observed Effort (total number of hooks observed during retrieval) Disposition (kept/discarded) Count of fish damaged by species
All	Bycatch	Species Identification Disposition (kept/released) Condition upon release (objectivity is key!)

[a] Demersal gear fished on the bottom is stationary, thus collecting data on either when gear is deployed or retrieved is sufficient.

[b] The variables listed were ranked as critical or preferred by more than 50% of the data users. However, workshop participants did not identify gear variables that should be recorded in all longline fisheries, as this is dependent on the bycatch species commonly caught and the gear type (pelagic/demersal) used, as well as geographic region. It was also noted that some of the gear variables are collected to determine factors influencing bycatch, while others are collected to monitor compliance with regulatory requirements. The full report lists additional variables that participants identified as critical or preferred for data collection based on current research and regulations.

To optimize data collections specific to bycatch species, the following variables were also identified:

- ✓ Collection of whole carcasses or parts
- ✓ Photographs
- ✓ Age (can be derived from teeth or other samples)
- ✓ Gender (observed, or blood sample/biopsy dart if cannot be observed)
- ✓ Sightings of protected species during set/haul
- ✓ Tags (presence/absence, attached prior to release)
- ✓ Use of deterrents (presence or absence).

When incorporating these best practices into observer data collections, workshop participants recommended that each program should :

1. Establish a process for prioritizing competing data needs, in coordination with data users. Priorities may be set according to fishery-specific data needs, but should incorporate broader priorities where possible.
2. Clearly communicate data collection priorities to all stakeholders.
3. Establish and disseminate metadata for observer databases that describe the data collection methods used, each variable collected, why it is collected, and the level of precision of measurements.
4. Ensure the use of standard and objective definitions, and clarify when data are "reported" (by the fishermen) as opposed to "measured independently" (by the observer).
5. Strive to meet data collection needs while keeping observer health and safety a priority. Some variables can be derived, reducing unnecessary work for observers.
6. Keep informed regarding current bycatch reduction research and emerging data needs to support research.

In conclusion, workshop participants recognized that decisions regarding the incorporation of these best practices would necessarily be made at the program level, but that these decisions should be informed by consideration of data needs to facilitate bycatch research on a global scale.

To obtain a copy of the full workshop report, please contact:

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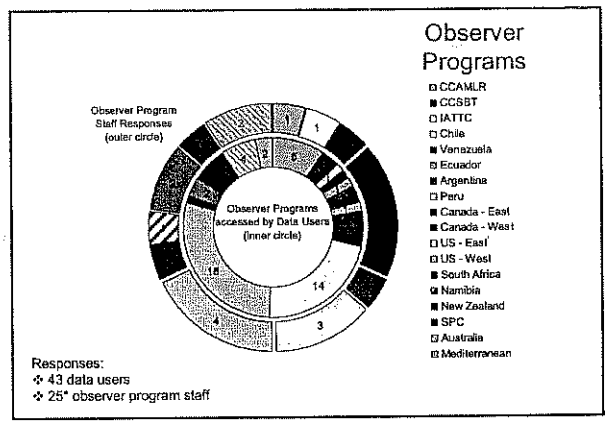
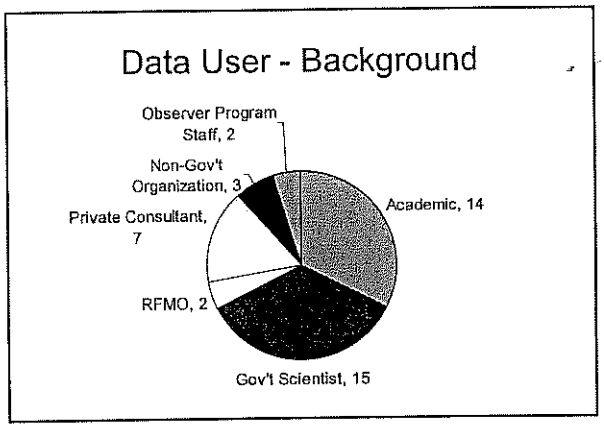
ATTACHMENT 1

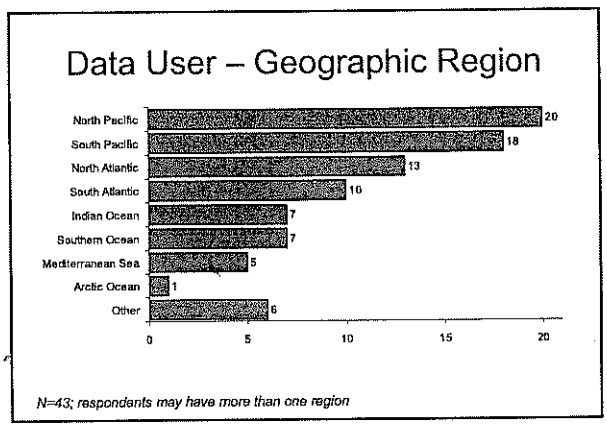
Information on the distribution of questionnaires relating to the collection of longline data

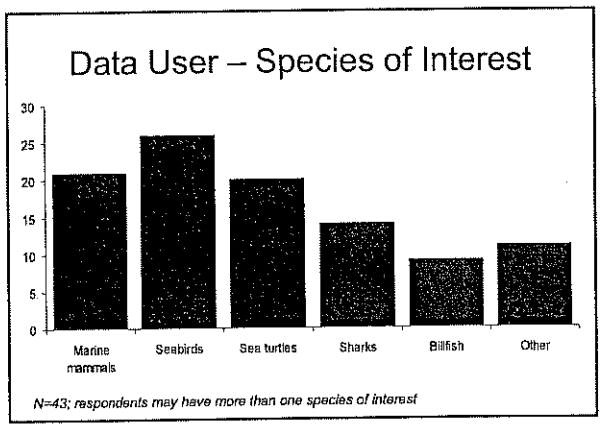
Pre-Workshop Questionnaires

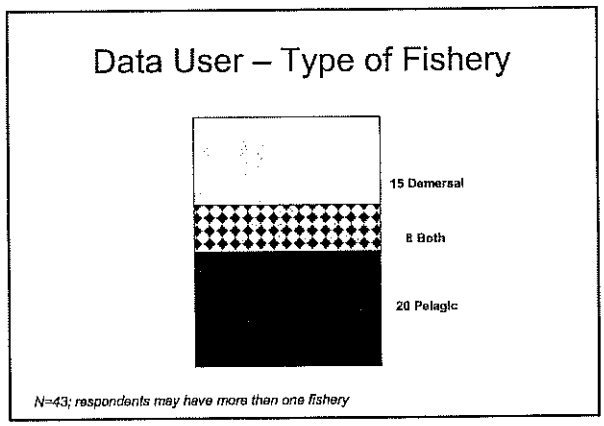
- Survey Monkey - web-based →excel spreadsheet
- Variables derived from U.S. observer manuals and forms (variables were already collected)
- Separate questionnaires for
  - Data users: ranked each variable as critical, preferred or optimal
  - Observer program staff: asked if variable collected, who provides gear, and feasibility
- Announcement sent to > 500



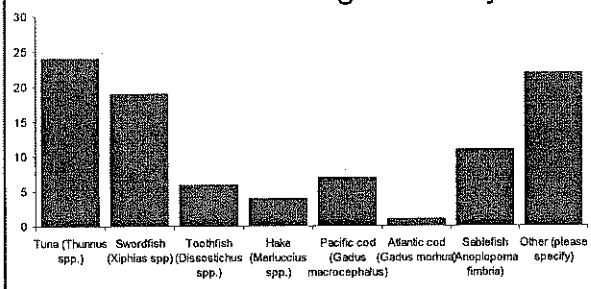






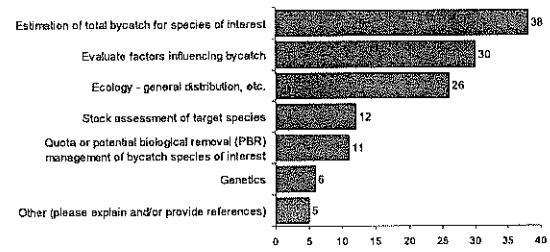


Data User – Target Fishery



N=43; respondents may have more than one target fishery

Data User – Data Uses



N=43; respondents may have more than one data use

Were survey respondents representative of all programs/data users (i.e., what programs/key data users may have been missed)?

- Brazil
- South Georgia (similar protocol to CCAMLR)
- Europe (CFAS)
- OTHER???