

2007 INTERNATIONAL FISHERIES OBSERVER CONFERENCE

TERMS OF REFERENCE FOR TRAINING WORK GROUP

OVERVIEW AND WORKGROUP MANDATE

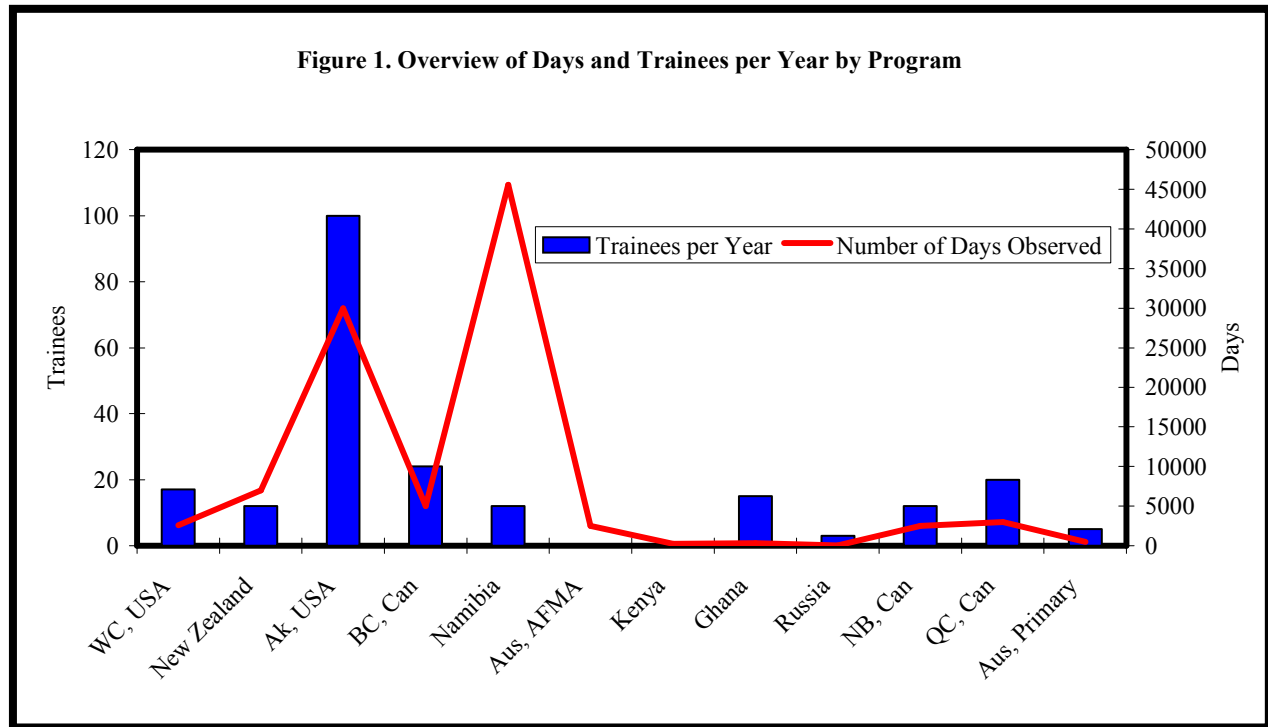
The success of fisheries monitoring programs that utilize Observers depends largely on effective recruitment, training and development of each Observer. The design and implementation of an organized training program with adequate support materials is essential in establishing the high standards of performance required of monitoring programs. This importance is evidenced by the fact that this topic has continued to be a major theme in previous International Fisheries Observer Conferences and continues to be a major element of all Observer programs. As Observer programs mature they become more knowledgeable about the training and data collection requirements of a fishery and therefore the training and materials produced to support the program will continue to grow. Therefore, programs with an established history have the advantage of both inherent knowledge and advanced materials that aid in the training and development of Observers. New and developing Observer programs would greatly benefit from access to established knowledge and resources through a network of individuals involved in Observer programs internationally. This training network must include representatives of Observer programs that reflect the true diversity of international Observer programs to be effective.

Both mature and developing observer programs benefit from access to training curricula used by other programs, and having access to resources that may benefit their program without incurring considerable cost to develop something that already exists.

The mandate of the fisheries observer training workgroup leading up to the 2007 IFOC was to complete an inventory of how observer training is conducted internationally. Questionnaires were distributed to workgroup members and conference participants in order to inventory common training elements, international observer recruitment and training standards and international observer training resources.

PROGRAM SUMMARIES

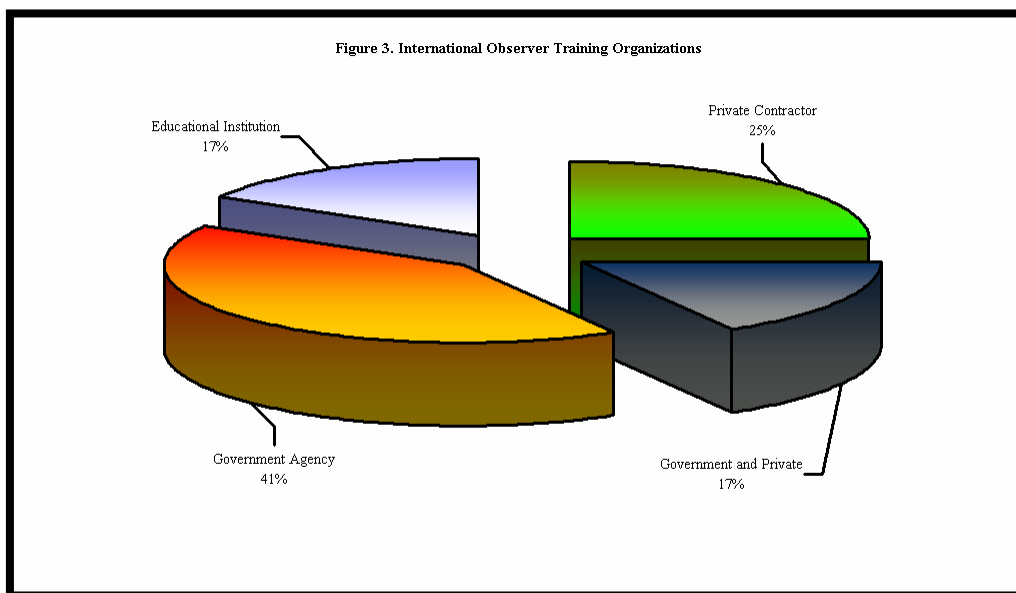
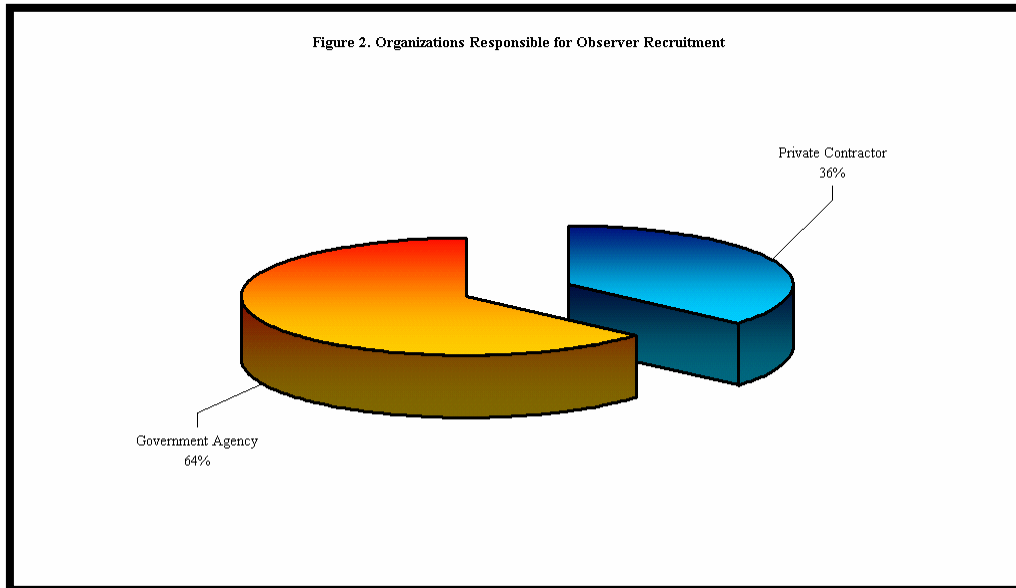
Twelve different international fisheries observer programs completed fisheries observer training questionnaires. The number of days of coverage completed by these programs ranged from 20 to 46000 annually. The number of fisheries observers trained by these programs ranged from 3 to 100 annually but was not directly proportional to the number of days completed by each program as shown in Figure 1.



OBSERVER RECRUITMENT

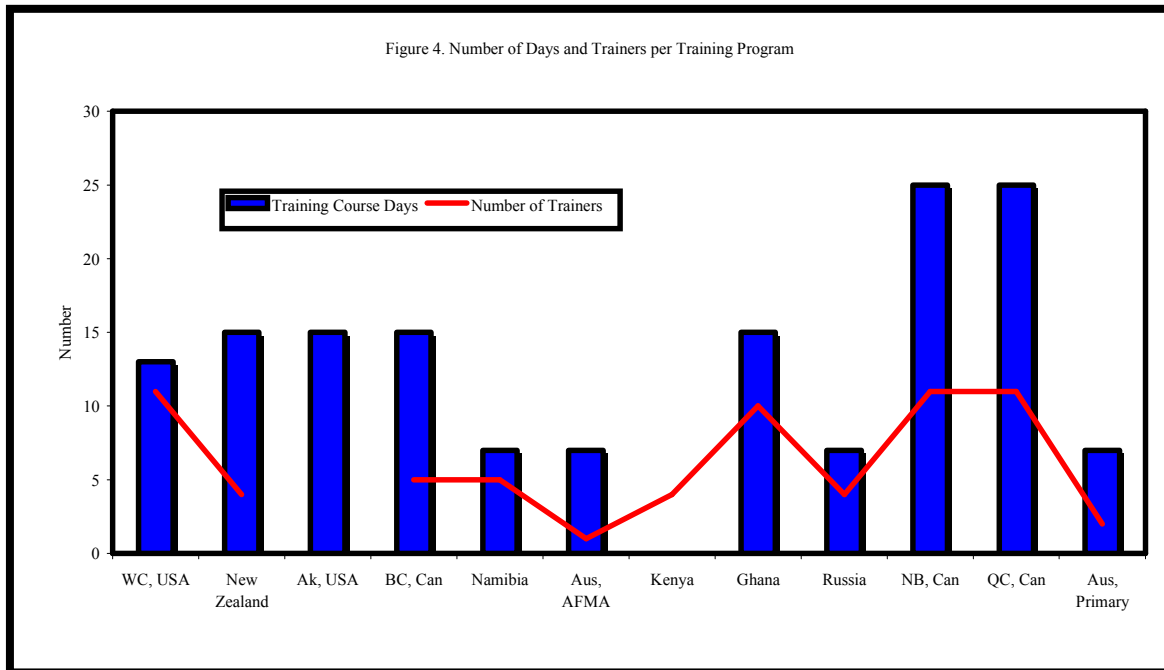
Effective recruitment of observers is the key to successful observer training programs. Many programs use a standardized application form, which aids the recruitment process. In addition extended recruitment periods increase the number of suitable applicants. Programs are advised to plan recruitment based on fishing activity. Workgroup members recommended that applicants be tested with real observer scenarios during the interview process, which helps to assess the suitability of each applicant.

Observer recruitment and training is organized in many different manners internationally. Both government fisheries agencies and private contractors are responsible for recruiting observers internationally. The organization responsible for recruitment is not always the same as the organization that conducts training. Government fisheries agencies, private contractors, educational institutions and partnerships between organizations are responsible for observer training and development. Figures 2 and 3 show the how recruitment and training responsibilities are shared between organizations in the international programs that completed questionnaires prior to the conference.



OBSERVER TRAINING PROGRAMS

The average at sea fisheries observer training program is 14 days based on the programs that responded to the observer training workgroup questionnaire. The number of trainers required to deliver observer training programs range from 1 to 11 with an average of 4.5 trainers and 18 trainees. The majority of training programs are conducted by a small number of dedicated trainers with additional subject matter experts from outside organizations. Figure 4 shows the number of days required for observer training and the number of trainers dedicated to the delivery of each program that responded to the training workgroup questionnaire.



CORE OBSERVER TRAINING PROGRAMS ELEMENTS

The core or required observer training program elements do vary with the mandate and design of each monitoring program. The actual time required to train observers for each core element will depend largely on the scope of the fishery. As an observer program matures and is more familiar with its subject fishery, the time required for the delivery of the training program may increase with the addition of enhanced training materials and modules.

Observer training workgroup members worked together to define the core training elements that each fisheries observer training program should ensure they completed with each new fisheries observer that joins their respective programs. These elements are listed and defined below:

- **Species identification** ~ identification of targeted and incidental organisms encountered in the monitored fishery.
- **Gear types** ~ Description of the fishing gear and electronic aids used by fishers in the monitored fishery ~ collecting fishing effort information.
- **Navigation** ~ How to collect and verify positional information in the subject fishery ~ definition of a fishing event.
- **Total catch estimates** ~ Techniques used to estimate the total catch size from a fishing event in the subject fishery.
- **Species composition estimates** ~ techniques used to estimate the catch weight of each species (taxa) captured from a fishing event.
- **Catch utilization estimates** ~ Techniques used to estimate the weight of catch that is retained and released in the subject fishery.
- **Random sampling** ~ techniques used to collect samples of the catch in a fashion that is representative of the catch.

- **Biological sampling** ~ How to collect and perform the biological samples required by the mandate of the monitoring program.
- **Data reporting** ~ How to report catch, biological and compliance data collected in the subject fishery.
- **Fisheries management** ~ A description of the current management regime of the subject fishery and the related observer duties that fall out of this.
- **Safety** ~ Marine emergency duties training and practical information on how to perform observer duties in a safe manner aboard commercial fishing vessels.
- **First Aid training**
- **Compliance monitoring** ~ Familiarization with the regulations of the subject fishery. How to identify and report compliance issues.
- **Code of conduct** ~ Confidentiality of observer data, professional conduct, unbiased data collection.
- **Observer duties** ~ Prioritizing observer duties and time management of each task.

Table 1 outlines the average number of hours that the workgroup members allocate to training their fisheries observers for each core training element. This time includes introductory modules as well as testing and hands on experience for observer trainees.

Table 1. Average hours for core observer training elements.

Core Training Element	Average Hours
Species Identification	10.5
Gear Types	4.0
Total Catch Estimates	5.0
Species Composition Estimates	11.0
Reporting Catch Utilization	3.0
Random Sampling	1.0
Data Reporting and Data Flow	7.5
Biological Sampling	4.5
Fisheries Management	4.5
Safety	14.0
First Aid	2.0
Code of Conduct	1.5
Navigation	3.0
Observer Duties	7.0
Compliance Monitoring	4.0
Total Hours	82.5

ENHANCED OBSERVER TRAINING PROGRAMS ELEMENTS

Enhanced training modules are developed as programs become more knowledgeable about their subject fishery and the work environment of their observers. These training elements ensure that the program's observers have a higher level of understanding of the issues related to the fishery that the work in and are better prepared to deal with their work environment. Observer programs can use data auditing tools to identify data issues and develop training solutions, which may require cooperation between a number of organizations. These enhanced elements may be considered core elements depending on the mandate and maturity of the observer program.

Observer training workgroup members worked together to define the enhanced training elements that each fisheries observer training program should ensure they completed with each new fisheries observer that joins their respective programs. These elements are listed and defined below:

- **Program overview** ~ overview of the structure and administration of the program and agency
- **Vessel Orientation** ~ Hands on orientation aboard fishing vessel(s)
- **Marine Mammal and seabird reporting** ~ how to identify seabirds and marine mammals and collect sightings reports
- **Communications** ~ communicating with members of industry and what communications are required of the observer by their program

Table 2 outlines the average number of hours that the workgroup members allocate to training their fisheries observers for each enhanced training element.

Table 2 Average hours for enhanced observer training elements.

Enhanced Training Element	Average Hours
Conflict Resolution	2.5
Fisheries Science	1.5
Species and Habitat Associations	1.0
Program Overview	2.0
Vessel Orientation	2.0
Communications	3.0
Marine Mammal Reporting	2.0
Seabird Reporting	1.0
Total Hours	15.0

OBSERVER TRAINING PROGRAM SUCCESSES

A number of successful enhancements that have been implemented by observer training programs conducted by the workgroup membership include hands on vessel orientations for new fisheries observers, commercial fishery industry involvement in observer training programs and presentations by experts covering the uses of fisheries observer data. In addition, cooperation from other fisheries agencies and programs to enhance resource materials and the incorporation

of adult learning techniques into training programs has improved the training programs conducted by the workgroup membership.

OBSERVER TRAINING PROGRAM RESOURCES

Workgroup members and conference participants were solicited for the training manuals, field guides, workbooks, exercise books and training videos that they use for their Observer training programs. A preliminary list of these resources is included at the end of this workgroup session report.

OBSERVER CAREER DEVELOPMENT

Workgroup members have outlined a number of initiatives that have been used to promote the professionalism and the career development of their observers. Initiatives include:

- Performing observer briefings, debriefings, upgrade and refresher training sessions.
- Encouraging observers to enroll in certified marine emergency duties training programs.
- Ongoing first aid certification.
- Relying on senior observers to conduct observer training, briefings and debriefings.
- Using Observers to work as technicians on research surveys and new fisheries projects.
- Promoting observers to new positions within the program or organization.

OBSERVER TRAINING WORKGROUP MANDATE

The observer training workgroup members provided their thoughts on a number of questions related to the purpose and direction of the workgroup. In addition, workgroup session participants provided their thoughts on these questions and helped to form the marching orders for the workgroup moving forward from the 2007 IFOC. A summary of the outcomes from these discussions was provided back to the conference and is outlined in the workgroup summary session.

Topic	Title	Organization	Contact
Observer Duties	Groundfish Fisheries Observer Resource Manual	Archipelago Marine Research Ltd.	scottb@archipelago.ca
Observer Duties	West Coast Groundfish Observer Training Manual	Northwest Fisheries Science Center	http://www.nwfsc.noaa.gov/research/divisions/frame/observer/observermanual/observermanual.cfm
Observer Duties	North Pacific Groundfish Observer Program Observer Sampling	Alaska Fisheries Science Center	http://www.afsc.noaa.gov/FMA/document.htm
Observer Duties	South Africa Observer Manual	BirdLife South Africa	http://www.birdlife.org/news/news/2007/05/seabirds_south_africa.html
Observer Duties	Sea Turtle Observer Manual	NOAA Southeast Fisheries Science Center	http://www.sefsc.noaa.gov/seaturtlefisheriesobservers.jsp
Observer Duties	Commercial Shark Fishery Observer Program	University of Florida	http://www.flmnh.ufl.edu/fish/Sharks/cso/cso2.htm
Observer Duties	Northeast Fisheries Science Center Observer Program	NOAA Northeast Fisheries Science Center	http://www.nfsc.noaa.gov/nfsc/directorate/divisions/femad/fishsnmp/fish/
Observer Duties	CCAMLR Scientific Observer Manual	CCAMLR	http://www.ccamlr.org/pu/e/e_pubs/om/toc.htm
Observer Duties	Alaska Marine Mammal Observer Manual	NOAA, Alaska Regional Office	http://www.fakr.noaa.gov/protectedresources/observer/s/mnop.htm
Observer Duties	Best Practices for the Collection of Longline Data to Facilitate Research and Analysis to Reduce Bycatch of Protected Species	NOAA, NMFS	http://www.st.nmfs.noaa.gov/st4/nop/trainingmanuals/Northwest/at_sea_hake_manual_edit_final_web_2006.pdf
Observer Duties	At sea hake manual	NOAA, NMFS	
Observer Duties	Biological Data Collection Manual for Ministry of Fisheries Observers	Ministry of Fisheries, New Zealand	Andrew.France@fish.govt.nz
Program Design	Observer Programme Guidelines	FAO	ftp://ftp.fao.org/docrep/fao/005/y4390e/y4390e00.pdf
Species Identification	Incidental Fish and Invertebrates of British Columbia	Archipelago Marine Research Ltd.	scottb@archipelago.ca
Species Identification	The Identification of Commercial Groundfish Species of British Columbia	Archipelago Marine Research Ltd.	scottb@archipelago.ca
Species Identification	Guide to Marine Mammals of Alaska	Alaska Sea Grant College Program	http://seagrant.uaf.edu/
Species Identification	Northeast Pacific Flatfishes	Alaska Sea Grant College Program	http://seagrant.uaf.edu/
Species Identification	Northeast Pacific Rockfish	Alaska Sea Grant College Program	http://seagrant.uaf.edu/
Species Identification	Biological Field Techniques for Lithodid Crabs	Alaska Sea Grant College Program	http://seagrant.uaf.edu/
Species Identification	Biological Field Techniques for Chionoecetes Crabs	Alaska Sea Grant College Program	http://seagrant.uaf.edu/
Species Identification	Field Guide to Sharks, Skates and Ratfish of Alaska	Alaska Sea Grant College Program	http://seagrant.uaf.edu/
Species Identification	Marine Mammals, Turtles and Seabirds of the Pacific	NOAA, Pacific Islands	http://www.fpir.noaa.gov/DIR/dir_mammal_turtle_seabird.html
Species Identification	Guide to Rockfishes of the Northeast Pacific Ocean	Alaska Fisheries Science Center	http://www.afsc.noaa.gov/race/media/publications/archives/pubs2000/techmemo117.pdf
Species Identification	Identification of Skates, Sculpins and Smelts by Observers in North Pacific Groundfish Fisheries	Alaska Fisheries Science Center	http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-142.pdf
Species Identification	A Field Guide to Alaskan Corals	Alaska Fisheries Science Center	http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-146.pdf
Species Identification	Sea Turtle Species Identification Materials	NOAA Southeast Fisheries Science Center	http://www.sefsc.noaa.gov/seaturtlefisheriesobservers.jsp
Species Identification	Shark Identification Materials	University of Florida	http://www.flmnh.ufl.edu/fish/Sharks/cso/cso2.htm
Species Identification	Identification of Seabirds in the Southern Ocean	Onley, D., and S. Bartle. 1999. Identification of Seabirds of the Southern Ocean: A Guide for Scientific Observers Aboard Fishing Vessels. Te Papa Press, Wellington.	
Species Identification	A guide to common offshore crabs in New Zealand waters	Ministry of Fisheries, New Zealand	http://www.fish.govt.nz/en-nz/default.htm
Species Identification	A guide to common deepsea invertebrates in New Zealand waters	Ministry of Fisheries, New Zealand	http://www.fish.govt.nz/en-nz/default.htm