

CCAMLR SCHEME OF INTERNATIONAL SCIENTIFIC OBSERVATION

Scientific Observation Conducted in the 1998/99 Fishing Season

3.1 International and national scientific observers provided 100% coverage of fishing operations of vessels targeting *Dissostichus* spp. or *C. gunnari* in the Convention Area during the 1998/99 season. Reports and logbook data were submitted from 32 cruises aboard longliners in Subareas 48.3, 58.6, 58.7 and 88.1, eight cruises aboard trawlers in Subarea 48.3 and Divisions 58.4.1, 58.4.3 and 58.5.2, and one cruise aboard a vessel potting for crab in Subarea 48.3. CCAMLR scientific observers had been deployed by six Members: Argentina, Australia, Chile, South Africa, UK and Uruguay. In addition, information collected by national observers aboard Japanese krill trawlers is routinely reported to WG-EMM. The Scientific Committee encouraged other Members with national observers on krill vessels to submit data to WG-EMM.

3.2 The Scientific Committee noted the continued improvement in both the quantity and quality of data and reports submitted by scientific observers in finfish fisheries. The Scientific Committee also noted that some of these advances had been achieved at high costs to the observers in terms of their on-board workload. All scientific observers were thanked for their great efforts over the past year, as well as in previous years.

3.3 Most of the logbooks and reports were submitted within six weeks of each observer's return to port. This year's closure of the longline fishery in Subarea 48.3 on 17 July had allowed the Secretariat to process the data and prepare preliminary analyses in good time for the meeting of WG-FSA. The Scientific Committee noted with appreciation that the logbook and report from Mr M. Purves (South Africa), scientific observer aboard a vessel fishing for crab until 23 September 1999, had been prepared and submitted to the Secretariat by the start of the meeting of WG-FSA.

3.4 The Scientific Committee advised technical coordinators that observer logbook data should be submitted as soon as available, and may be submitted in advance of the observer narrative report.

3.5 As requested at its last meeting (SC-CAMLR-XVII, paragraph 3.4), the Scientific Committee noted that electronic data forms (eforms) are now available for reporting observer data on finfish and crabs. These observer eforms, as well as eforms for most other types of fishery data, have been developed by the Secretariat in Microsoft Excel. Approximately 30% of the data submitted in 1999 were submitted electronically using eforms. In addition, a prototype Microsoft Access database had also been developed as an alternative for submitting observer data; this database had been available since mid-1999, but was yet to be evaluated.

3.6 The Scientific Committee noted with concern that there is still a paucity of information on the operation of krill fisheries and the associated by-catch in the fishery. Such information which is urgently needed for the work of WG-EMM could only be obtained by observers on krill fishing vessels. The following is a summary of the data types currently in CCAMLR's *Scientific Observers Manual* (Section I, Part 2, paragraph 4):

- (i) observations on fishing activities;
- (ii) haul-by-haul data on catch and effort;
- (iii) representative length-frequency distributions;
- (iv) representative distribution of sex and maturity stages;
- (v) observations on feeding intensity;
- (vi) observations on by-catch of juvenile finfish; and
- (vii) observations on incidental mortality of predators (seabirds and seals).

3.7 The Scientific Committee agreed that it would be desirable to extend this list to include data on the conversion factors which are used to convert the weight of various krill products to

an estimated total fresh weight (Annex 4, paragraphs 2.8 and 2.14).

3.8 Information on the decision processes used by fishing companies and vessel masters to formulate fishing operation strategies was also needed (Annex 4, paragraph 2.16). Such information on fishing strategies could be acquired by developing standard survey questionnaires based on the list of activities identified in the CCAMLR-sponsored study undertaken by Butterworth (1988). Members were encouraged to undertake this task and provide comments for consideration at the next meeting of WG-EMM.

3.9 The Scientific Committee encouraged the deployment of national or international observers on krill fishing vessels to collect and submit information in accordance with the CCAMLR Scheme of International Scientific Observation.

3.10 The Scientific Committee agreed that high priority should be given to deploying scientific observers (either international or national) aboard commercial krill vessels during the CCAMLR 2000 Krill Synoptic Survey of Area 48 (hereinafter referred to as the CCAMLR-2000 Survey) during January and February 2000. The information provided would be important to the interpretation of survey results in relation to fishing operations taking place at the same time as the survey and over various spatial scales.

3.11 It was agreed that during the CCAMLR-2000 Survey, particular emphasis should also be given to obtaining observer data on the demographics of krill from commercial catches. Scientific observers were requested to sample 200 krill collected from one commercial haul per day; individual animals should be measured, and sex as well as stage of maturity determined. Samples could either be measured aboard, or preserved in formalin for later measurements. As a last resort, samples could be frozen. Should the sampling regime be too onerous, the Scientific Committee directed observers to collect fewer samples, but still concentrate on the 200-individual sample requirement.

3.12 Along with the deployment of scientific observers aboard vessels with experience in krill fisheries, Members were especially encouraged to place observers aboard vessels which have recently entered these fisheries, or which were about to begin fishing for krill for the first time. Information from vessels which have recently entered the fishery should provide useful insights into the development of fishing operations and the evolution of fishing strategies. The Scientific Committee recognised that deployment of observers may be limited by availability of accommodation aboard some krill fishing vessels.

Future Developments

3.13 In considering future developments in CCAMLR's Scheme of International Scientific Observation, the Scientific Committee agreed that it was essential to consider the conditions under which the observers operate compared with the scientific merit of the information they collect. In this regard, it was recognised that not all requests for data may be feasible.

3.14 A number of developments of the scheme have been proposed by the working groups and technical coordinators, and the Scientific Committee agreed that the following should be carried out during the forthcoming intersessional period:

- (i) The Secretariat should update the observers' table of nautical dawn and dusk to include the times for areas south of 72°S in Subarea 88.1, and the tables should be made as simple as possible (Annex 5, paragraph 3.68).
- (ii) The Secretariat should amend scientific observation logbook forms for krill fisheries in order to include records of information on conversion rates for krill products and urge Members to submit this information to the Secretariat (Annex 4,

paragraph 12.2).

- (iii) The Secretariat and Members should develop standard survey questionnaires to collect information on krill fishing strategies (Annex 4, paragraph 12.2).
- (iv) WG-FSA and the Secretariat should investigate sampling strategies for measuring fish, and identify implications for assessments (Annex 5, paragraph 9.11).
- (v) The Secretariat should address tasks identified by ad hoc WG-IMALF (Annex 5, paragraphs 9.14 and 9.15).

3.15 In addition, the Scientific Committee endorsed WG-IMALF's recommendation (Annex 5, paragraph 3.63) that observers weigh 30 longline weights at random. However, the Scientific Committee recommended that this procedure be conducted while the vessel is alongside the wharf, and preferably during a routine inspection by the Flag State (e.g. under Conservation Measure 119/XVII).

3.16 The Scientific Committee stressed that the responsibility for compliance with the requirements of Conservation Measure 29/XVI resides with the Flag State. Flag States should be encouraged to ensure that their vessels are fully equipped to comply with these requirements prior to their departure from port.

3.17 The Scientific Committee agreed that the collection of information on the disposal of garbage and the loss of fishing gear at sea should be added to the list of tasks of scientific observers. Specific forms should be developed by the Secretariat for recording and reporting such information (Annex 5, paragraphs 3.52 to 3.54).

3.18 The Scientific Committee discussed the need for a species identification guide for finfish which could be used by observers in the field. As a first step, the Scientific Committee agreed that taxonomic keys for species of finfish commonly encountered in the longline fishery should be extracted from Gon and Heemstra (1990), and distributed to scientific observers to facilitate the acquisition of data on by-catch at the level of species. This task should be undertaken by the Secretariat in collaboration with the technical coordinators, and the experience of such a guide by observers should be reviewed by WG-FSA and the Scientific Committee at next year's meeting.

Advice to the Commission

3.19 The Scientific Committee drew the attention of the Commission to the continued improvements in both the quantity and quality of data and reports submitted by the scientific observers in finfish fisheries, some of which had been achieved at a high cost to observers in terms of their on-board workload.

3.20 The Scientific Committee also drew the attention of the Commission to the information which has been collected by national observers aboard Japanese krill trawlers, and which is routinely reported to WG-EMM. However, the Commission should note that there remains a paucity of information on the operation of krill fisheries. This would be rectified by the deployment of more scientific observers and the routine submission of their data to CCAMLR. The Scientific Committee had outlined a protocol for the collection of data by scientific observers. The Commission may wish to encourage Members to develop bilateral agreements and deploy international scientific observers in krill fisheries when practicable.

3.21 The Scientific Committee reiterated its advice that, wherever possible, two scientific observers should be used on longline vessels, one expert in fish work, the other experienced with seabirds. In such cases, the Scientific Committee recommended that the data collection

responsibilities of each observer should be clearly defined prior to the cruise, preferably in bilateral agreements.

3.22 The Scientific Committee noted the value of factual sightings by scientific observers of vessels engaged in IUU fishing (Annex 5, paragraph 9.13). This task had been endorsed by the Commission (CCAMLR-XVII, paragraph 8.16) on the proviso that the independence and integrity of scientific observers were not compromised, and that this activity be confined to gathering data in support of the Scientific Committee. The Scientific Committee requested that scientific observers continue reporting data on sightings in their reports.

3.23 The Scientific Committee recommended to the Commission that SCOI may wish to undertake its own review of the observer reports to make sure that the information supplied is fully understood. Information of direct relevance to SCOI is mostly contained in the section 'observed fishing vessel activity' of the observer reports.

3.24 The Scientific Committee wished to remind the Commission that a vessel's compliance with conservation measures, and the submission of catch and effort reports and fine-scale data arising from the vessel's activities, remained the responsibility of the Flag State.