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**THE NEED FOR INTERIM PROTECTIVE MEASURES
FOR ANTARCTIC KRILL FISHING IN AREA 48**

Submitted by ASOC

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THE NEED FOR INTERIM PROTECTIVE MEASURES FOR ANTARCTIC KRILL FISHING IN AREA 48

I. INTRODUCTION

For several years, ASOC has been calling for improved management of Antarctic krill fisheries by establishing feedback management procedures at the SSMU level, requiring systematic scientific observer coverage on board krill vessels, increasing research through a coordinated research plan, improving monitoring through a strengthened CEMP program, and enhancing control measures applicable to krill fishing, among others.

ASOC was disappointed by the outcome of CCAMLR's XXVII Meeting in relation to krill management. Despite recommendations from the scientific committee and working groups, no progress was made on key issues such as Stage 1 SSMU allocations in Area 48 and systematic scientific observer coverage. In addition, the meeting did not assert a clear roadmap to be followed by CCAMLR in the short term to fill those gaps and implement an agreed arrangement for the krill fishery. This situation is worrying given the importance of krill for CCAMLR and the Antarctic marine ecosystem. ASOC was also very concerned by the tendency shown by some delegations at last year's meeting to refuse to accept best scientific advice, undermining the role of the Scientific Committee and its working groups.

In this paper, ASOC urges CCAMLR to enact urgent precautionary interim measures, at this year's meeting, to prevent excessive concentration of krill catch in coastal areas close to predator colonies in Area 48 before the fishery escalates. These interim measures, which would stay in place until Stage 1 allocations were adopted, would hopefully act as a catalyst for their development. Currently there is no clear strategy to implement Stage 1 of the SSMU allocation despite the Commission agreeing 2 years ago that it could proceed. It is now time for CCAMLR to apply the precautionary approach and introduce interim measures that prevent irreversible harm to predators.

At the same time, and of utmost importance, CCAMLR must develop feedback management procedures in order to be able to manage the fishery to further protect predators, incorporating the effects of climate change. To facilitate this process, the Scientific Committee should develop recommendations to adapt and expand the current CCAMLR Ecosystem Monitoring Programme (CEMP) such that it can provide information to support the feedback management system at the SSMU level. Concurrently, funding mechanisms need to be adopted to support existing and expanded monitoring, such as a dedicated CEMP Fund.

Finally, increased accountability and enforcement measures need to be enacted. These include establishing a standardized method for reporting the green weight of the krill catches, and a requirement that all vessels utilize this method. In addition, a new conservation measure needs to be adopted, compelling all Parties fishing for krill to require systematic scientific observer coverage for all of their vessels, in accordance with the CCAMLR Scheme of International Scientific Observation.

II. Priority Issues for CCAMLR XXVIII

A. The need to spread out krill catches in order to prevent concentration of fishing effort

ASOC is very concerned about the potential for the krill fishery to expand up to the interim catch limit in Subareas 48.1 - 48.4 (620,000 tonnes) without any spatial spreading of catches. Currently 99% of krill fishing takes place in coastal areas close to land-based predator breeding colonies, and overlap with their foraging ranges and with areas also used by recovering baleen whale populations. The likelihood of localized impact on predators is quite high unless some spatial area limitations on catches are implemented.

In 2007, in view of the difficulty to implement a feedback management system for the krill fishery CCAMLR adopted a staged approach for the allocation of krill catches among SSMUs in Area 48 (applicable to Subareas 48.1 to 48.4). The plan was to implement an allocation in stages, based on the best scientific evidence available at each stage. The initial stage of this process included an evaluation of the risks to krill, predators and the fisheries of the different options that had been put forth for subdividing the

catch, given the current uncertainties. The goal was to determine the overall level of fishing that was believed to be “safe” and how it could be subdivided into SSMUs. Although it was expected that advice on “Stage 1” of this subdivision could be delivered by the Scientific Committee in 2008, this did not happen; this work is currently stalled at the Working Group on Ecosystem Monitoring and Management (WG-EMM). Thus, it is difficult to imagine how CCAMLR will be able to start developing feedback management options (Stage 2) from 2009 onwards, as initially planned.

At the last SC meeting, some members expressed concern that the trigger level may not be as precautionary as initially thought. Consequently, a new risk assessment, aimed at analyzing the risks of allowing expansion of the fishery up to the trigger level without SSMU allocations, has been conducted by Watters et al. (2009)¹ applying the FOOSA model in the context of WG-EMM. This assessment has confirmed that the current trigger level is not sufficiently precautionary, as risks to the ecosystem are likely to occur as krill catches approach the 620,000 tonnes level. Thus the current management system (based on the trigger level as overall krill catch limit until SSMUs are implemented) is not precautionary, and clearly not consistent with CCAMLR principles.

Under the current circumstances, “No Decision” is the worst scenario for CCAMLR since it significantly increases the risk to predators and the Antarctic marine ecosystem. This would undermine the principles of the Convention, particularly in relation to the ecosystem and precautionary approach as formulated in Article II. This situation is very well expressed in the Watters et al. 2009 document:

*“In this document our objective is to assess the risks of not deciding to allocate the precautionary krill catch limit among SSMUs and allowing uncontrolled expansion of the krill fishery up to the current trigger level. This is equivalent to assessing the risks of status quo management and of allocating the catch limit among SSMUs on the basis of the spatial distribution of historical krill catches (Option 1). We use the same methodological approach reviewed and endorsed at the last meeting of the WG-SAM and applied at the last meeting of the WG-EMM. Using the reference set of parameterizations developed by Watters et al. (2008a), we show that FOOSA simulates minimal impacts by the current krill fishery, but an **uncontrolled expansion of the fishery up to the current trigger level is likely to risk depletion of krill-dependent predators. Therefore, the current trigger level may not be sufficiently precautionary to achieve the objectives of Article II.**”*

In addition, likely related impacts from climate change have increased significantly since 1991 (when the trigger level was introduced). Therefore the conditions under which the trigger level was established have changed and it is no longer valid to rely on the original basis for the trigger level which was the maximum sub-area catches from the 1980s. In this context, it is difficult to know how the system may react today (or in the future) to similar fishing levels.

In recent meetings, such as the SC-CAMLR-CEP workshop held in May 2009, it was recognized that climate change impacts on the Antarctic ecosystems are of major concern, and that management decisions would need to consider how climate change affects the marine ecosystem. WG-EMM also recognized that the precautionary approach will need to be examined in the context of climate change, and that harvest strategies will need to be adapted to meet the objectives of Article II of the Convention. Also WG-EMM acknowledged that climate change, combined with changes in oceanography, has important implications for the management of the Antarctic krill fishery and that climate change has the potential to induce rapid change within ecosystems.²

¹ WG-EMM-09/12, George M. Watters, Simeon Hill, Jefferson T. Hinke, and Phil Trathan. “the Risks of not Deciding to Allocate the Precautionary Krill Catch Limit among SSMUs and Allowing Uncontrolled Expansion of the Krill Fishery up to the Trigger Level” (2009), hereafter quoted in this document as “Watters et al. (2009)”.

² “The Working Group recalled: the trigger level represents the aggregate of the highest catches from each subarea during the 1980s; prior to the current work program of WG-EMM (2004 to 2009) the assumptions surrounding the trigger level were not evaluated against current understanding of ecosystem parameters, processes and variability; assumptions surrounding the trigger level were not evaluated against current understanding of ecosystem parameters, processes and variability; Atkinson et al. (2004) have shown a decline in krill abundance (in the order of up to 80%) in Area 48 since the 1980s; Adélie and chinstrap penguin populations in the Antarctic Peninsula region have declined over the same period; climate change is known to be impacting ecosystem components in the region and is likely to

In summary, it is now clear that the trigger level does not provide sufficient protection to predators from the impacts of fishing. The situation becomes even more pressing by taking into account that even last year, the Scientific Committee noted that the capacity exists within the fishery to exceed the 620,000 trigger level.³ The predicted catches for next year from this year's notifications are double last year's catch and there is vessel capacity to go much higher. Therefore, catches can increase up to the trigger level with no further protective provisions in place. Precautionary measures need to be taken this year to spread out the catch, in order to prevent local concentration of krill fishing, especially in coastal areas.

At the latest WG-EMM meeting, it was recognized that based on existing evidence, a precautionary spatial allocation of the trigger level is needed. The option of subdividing the trigger level among Subareas was discussed and received some initial support from participants. Accordingly, three methods for this subdivision were discussed. One of these methods, based on the proportions of krill biomass in each smaller area as estimated from the CCAMLR-2000 Survey proportions of historical krill catches in each Subarea (based on the CCAMLR 2000 Synoptic Survey), seems the most appropriate.

In addition to subdividing the krill catch limit amongst Subareas in order to prevent excessive concentration of catches in one particular Subarea, ASOC believes that it is necessary to introduce additional measures to prevent excessive concentration of catches in coastal areas. This is especially important since the fishery concentrates heavily in these coastal areas, and because, according to current survey estimates, a large percentage of the krill biomass in Area 48 is to be found in pelagic areas.

Following the precedent established by CCAMLR for new and exploratory krill fisheries in Subarea 48.6, where the catch limit is split between coastal and pelagic areas, a similar rationale should be applied to distribute the catch limit within each of the three Subareas (48.1-48.3) but matching the estimated density distribution of the krill population in these Subareas based on the best available information, the 2000 Krill Synoptic Survey.

It is important to note that the interim measures proposed above would only remain in effect until such time as agreement is reached on SSMU allocations, and including adequate observation and monitoring arrangements for both the fishery and krill predators are in place. The completion of an SSMU allocation regime and the implementation of a feedback management system remain a high priority for CCAMLR.

ASOC hopes that CCAMLR Members recognize the importance of this year's meeting to move forward on measures to protect krill predators. Time is clearly running out for CCAMLR to take action. Unless measures are adopted now to restrict fishing in coastal areas, it will not be possible for CCAMLR to fulfill its mandate.

B. Filling the need for more research and monitoring through a coordinated research plan and a strengthened CEMP program

ASOC is concerned by the magnitude of scientific uncertainty that still remains in relation to krill fisheries management, and the lack of a clear plan to address these uncertainties. The inability to consider these uncertainties has been a major obstacle to the process of establishing Stage 1 allocation of krill catch limits among SSMUs in Area 48. ASOC considers these uncertainties should not be used as a reason for not taking action.

ASOC is particularly concerned about problems in relation to estimating pre-exploitation biomass (B_0). At the last WG-EMM meeting (July 2009) it was concluded that current B_0 estimates in Area 48 contain a number of errors (i.e. in the implementation of the methodology) and under-represent the level of uncertainty. Thus, there was agreement that B_0 needs to be recalculated. In addition, ASOC maintains that there is a compelling need to conduct new surveys as the available data is almost 10 years old.

Generally speaking, as highlighted by CCAMLR's performance review panel, CCAMLR has not yet agreed on a plan to tackle the lack of empirical data on key issues for the management of krill fishing in Area 48. In fact, the panel concluded that the lack of a "fishery-based research program" is one of the pending issues in relation to CCAMLR's management of the krill fishery.

ASOC previously has urged CCAMLR to come up with a comprehensive research plan for krill, to be developed by the Scientific Committee. The plan should prioritize the questions that need to be answered for

continue to do so." See SC-CCAMLR-XVIII/3 (Report of the Working Group on Ecosystem Monitoring and Management, Bergen, Norway, 6 to 17 July 2009), paragraphs 3.95-3.110.

³ SC-CCAMLR XXVII, paragraph 4.4.

taking management decisions at the SSMU level. In addition, this plan should be accompanied by financial investment commitments by CCAMLR Members as needed.

In July 2009, WG- EMM recognized the importance of developing a research and monitoring plan so as to reduce scientific uncertainties and information gaps to support feedback management needs and allow progress on SSMU allocation in Area 48.⁴ ASOC hopes that this recommendation will be translated into action at the forthcoming meeting of CCAMLR, and that uncertainties will not be used as a reason for not taking action.

Another issue of paramount importance is the need to reform the CCAMLR Ecosystem Monitoring Program (CEMP) in order to effectively assist CCAMLR in the management of the Antarctic krill fishery. As already recognized, in its current configuration, CEMP does not allow distinguishing the impacts of fishing from those associated with environmental change, its main objective at the time of its creation. In addition, some CEMP sites have been discontinued in recent years and data submitted to the CEMP has decreased. In some cases, information arising from different CEMP sites with similar geographical and oceanographic features, indicate contradictory trends on predator parameters, which are difficult to explain without further investigation.

As it was acknowledged by WG-EMM in its last meeting, climate change could potentially induce rapid changes within the ecosystem, impacting the way indices generated by CEMP are being used to detect fisheries impacts. According to WG-EMM, in order to distinguish between climate change and fisheries impacts, it may be necessary to establish reference (control, i.e. complementary no fishing) sites and/or additional parameters. Additionally, climate change can also affect predators over a variety of temporal and spatial scales in a direct or indirect way. Important changes on the reproductive performance of predators as a result of climate change have been also indicated.⁵

Until CEMP is significantly reformed and expanded in its coverage, it will be very difficult to incorporate monitoring data into the formulation of specific conservation measures. This was also acknowledged by CCAMLR's performance review panel in its recommendations to the Commission to: *"review, and as necessary revise, CEMP to ensure that it can support the application of these procedures and other management decision-making processes in order to achieve the objectives of Article II. Consider approaches to fishery development and monitoring that will allow separation of the effects of fishing and natural variability, or at least that have a demonstrably high probability of achieving the objectives of Article II in spite of not being able to separate these two effects"*.⁶

Similarly, at its last meeting WG-EMM recognized that reviewing CEMP has become a priority. ASOC urges CCAMLR to revise CEMP in an effective and timely manner.

Unfortunately, investments in the development of the krill fishing industry are currently not being matched by the appropriate investments in science that would be needed for a robust, scientifically-based management system. ASOC has repeatedly encouraged CCAMLR to develop funding mechanisms that ensure that the resources are available for an expanded, on-going monitoring program, such as a dedicated CEMP Fund. Fishing nations have a special responsibility in this regard.

The Performance Review Panel identified this problem when it recommended that CCAMLR:

"develops mechanisms to address burden-sharing for research and monitoring among Members so as to reduce the current reliance on a small number of Members and consequent risk to CCAMLR's management approaches if any of these Members reduced their input. The Review Panel viewed this with particular concern given the fundamental importance of research and monitoring to the CCAMLR management approach and the difficulties experienced by scientists in securing funding for monitoring".⁷

ASOC sees as a positive development that the last meeting of WG-EMM suggested the creation of a funding mechanism to undertake the needed scientific research and monitoring.⁸ CCAMLR needs to follow-up on this recommendation and establish the basis for a CEMP Fund to become operative as soon as possible. A precedent already exists in CCAMLR by the recent creation of an MPA Fund.

⁴ SC-CCAMLR-XVIII/3, paragraph 3.149.

⁵ SC-CCAMLR-XVIII/3, paragraph 3.110.

⁶ See CCAMLR-XXVII/8 (Report of the CCAMLR Performance Review Panel), chapter 3.1.3.

⁷ See CCAMLR-XXVII/8, chapter 3.2.1.

⁸ SC-CCAMLR-XVIII/3, paragraph 3.149.

III. Other important issues

A. Systematic observer coverage for the krill fishery

ASOC was deeply disappointed by CCAMLR XXVII's failure to agree to a systematic observer coverage was an outcome of the 2008 CCAMLR Meeting. Notwithstanding this, ASOC greatly appreciates the efforts undertaken by several CCAMLR Members to make progress on this issue. Because scientific observation programs are a key component for the ecosystem-based management of the fishery, CCAMLR needs to urgently adopt a conservation measure that ensures systematic coverage of international scientific observers for the krill fishery, in accordance with the CCAMLR Scheme of International Scientific Observation. While ASOC recognizes that this issue won't be fully resolved at this meeting, ASOC continues to encourage further progress on this issue. In fact, we consider it a minimum standard for the largest fishery in the CCAMLR Area, targeting the core of the Antarctic foodweb, and particularly because of the large degree of scientific uncertainty.

B. Uncertainties on krill mortality as a result of fishing

1. The need for a standardized reporting method for krill catches

At the last CCAMLR meeting, ASOC considered this was a priority issue for the Commission to resolve. It is of great concern that krill fishing States report catch data derived from product information, without indicating the product specific conversion factors used, causing significant uncertainty in krill catch data. This not only affects assessments of krill stocks, but also the estimations of the impact of krill removals on predators. Moreover, it raises important enforcement issues. CCAMLR XXVII recognized the importance of consistent green weight reporting. ASOC was encouraged by the progress made last year in recognizing the problem, and hopes that CCAMLR will take necessary action to ensure that this issue is resolved as soon as possible. Biological, fine-scale data reporting should also be required in accordance with CM 23-05 (2000). In addition, countries should continue to report product type information, which is important to understand the dynamics of the fishery.

2. Krill escapement mortality

The issue of krill escapement mortality from krill nets raises further concerns about the capacity to effectively measure krill removals during fishing operations. As was reflected in the last WG-EMM meeting, krill trawl net escapement mortality represents an important source of uncertainty, which further undermines CCAMLR's capacity to determine the real impact of fishing operations on the ecosystem.

Krill escapement mortality occurs when krill gets squeezed through the nets while fishing, an unknown percentage of which gets killed or seriously injured, without being counted as caught. Many different factors such as krill density, type of gear, speed of trawling, and mesh size (both cod end and side panels - a range of different mesh sizes are used in both cod ends and side panels) could affect unseen mortality. At the last WG-EMM meeting, it was indicated that mortality of krill could be between 10 and 50% higher than that reported being caught. Furthermore, given the discrepancy between the estimates of mortality of escaped krill, together with the lack of data on the rates at which krill escape from nets in different fishing gears, WG-EMM recommended a concerted effort to estimate escape mortality in the krill fishery, including through the evaluation of existing results and the continued development of existing models⁹. Further, the Working Group recommended that the Scientific Committee ask Members fishing for krill to actively investigate the effect of different fishing gears on krill escapement mortality.¹⁰ ASOC urges CCAMLR Members to follow the recommendations from WG-EMM and provide the necessary information and methodologies so that this issue can be resolved rapidly.

3. Fish larvae by-catch in the krill fishery

By-catch of marine larvae in the krill fishery remains a concern, especially in view of the diversity of gears and methods currently used to catch krill. At the CCAMLR 2008 meeting, the Scientific Committee noted that there is still uncertainty over the level of by-catch of juvenile and larval fish in the krill catch over all seasons and areas in which the krill fishery operates, and from different fishing gears and fishing strategies. The uncertainty about the actual krill catch derived from the different conversion factors used in krill catch

⁹ SC-CCAMLR-XVIII/3, paragraph 3.5.

¹⁰ SC-CCAMLR-XVIII/3, paragraph 3.7.

reporting adds even greater uncertainty to the extrapolated level of juvenile fish by-catch in the krill fishery. As early as 2006, WG-EMM noted that the occurrence of fish larvae by-catch observed in the krill fishery was higher than the previous general understanding of by-catch in this fishery. The Working Group agreed that such results underscore the importance and need to increase observer coverage in the krill fishery.

ASOC is concerned about the uncertainty over the level of fish larvae by-catch in the krill fishery, which includes demersal species, highly depleted in the late 1960s and 1970s (such as rock cod), and still at low population levels. Furthermore, the insufficient level of observer coverage and the high level of uncertainty on by-catch of juvenile and larval fish in the krill catch over all seasons and areas preclude a solid analysis of the impact of this by-catch on fish populations.

To address this issue, CCAMLR needs to ensure systematic scientific observation in the krill fishery. It also needs to develop consistent observer protocols across krill fishing vessels to analyse by-catch of fish and other marine larvae, including a procedure for sampling fish of all sizes and different species. In addition, the Scientific Committee should provide advice on the acceptable level of by-catch for different fish species in the krill fishery.

IV. Note on CCAMLR's Performance Review and Krill

Having had a formal representative on the Performance Review Panel, ASOC is strongly supportive of actions by CCAMLR to implement the recommendations emanating from the Panel's report. At this year's meeting, ASOC calls on CCAMLR to act with a sense of urgency on the following panel recommendations from the Panel's report, which are of relevance to the krill fishery:

Under 3.1.2 - trends in the status of marine living resources under the purview of CCAMLR:

- *“Design and agree a strategy for krill fishery development (e.g. timing, spatial scale and location, catch limits) and fishery monitoring that explicitly (i) ensures that adequate information is available to support orderly development of the fishery while addressing Article II, and (ii) allows separation of the effects of fishing from climate change and natural variability. Further, and in an integrated manner, the monitoring of key dependent predators should be explicitly designed to (i) aid separation of the effects of fishing from climate change and natural variability, and (ii) explicitly link to the ongoing management decisions for krill fishery development. Consideration should be given to the use of indicators of predator status in the strategy for krill fishery development”.*

Under 3.1.3 - status of species that belong to the same ecosystems as, or are associated with or dependent upon, targeted Antarctic marine living resources:

- *“Options should be examined to develop and implement a more comprehensive and consistent monitoring program for non-retained by-catch species (i.e. fish, elasmobranches and invertebrates that are directly or indirectly affected by fishing but that are not commercially retained). This should aim to allow for the effective monitoring of the status of these species or groups, and the status should be centrally compiled and available for CCAMLR decision-making. Monitoring may be differentially targeted on species/areas of perceived highest risk, but it should endeavour to provide wide ecosystem coverage and relate to management actions that CCAMLR could take. The monitoring program should consider the need to differentiate the effects of fishing from the effects of other human activities and from natural variability. Consideration should be given to mechanisms that can ensure an ongoing monitoring program to meet CCAMLR's requirements, including mechanisms that reduce the reliance and focus on funding and interests of individual Members. As appropriate, this monitoring program should be collaborative with other elements of the ATS and with the activities of those States that have national jurisdiction within parts of the Convention Area”.*
- *“Further examine, develop and agree methods to link monitoring information from dependent species to fishery management decision procedures, especially the procedures for determining the location and size of the krill catch. Ensure that these procedures have a high probability of satisfying the requirements of Article II”.*

Under 3.2- Ecosystem Approach:

- *“An explicit and active process should be developed to anticipate threats from fishing and environmental change, and to develop appropriate approaches through research, monitoring and/or precautionary CMS to address them before they become manifest”.*

Under 3.3.4- extent to which CCAMLR is addressing any gaps in the collection and sharing of data as required:

- *“Monitoring and reporting of the krill fishery should be made consistent with the requirements of other CCAMLR fisheries”.*

Under 3.5.3 - extent to which CCAMLR is applying uniform principles and procedures to all species in the Antarctic ecosystem:

- *“The RP strongly supported the views expressed in paragraphs 3.3 to 3.17 of the 2007 Scientific Committee report (SC-CAMLR-XXVI) regarding the collection of data from the krill fishery, and recommended that at least the requirements of the new and exploratory fisheries be applied to the krill fishery. The procedures for new and exploratory fisheries should be applied to all new and exploratory fisheries, including the developing krill fishery”.*

Under 4.3.1 - extent to which CCAMLR has adopted integrated MCS measures:

- *“There should be consistency in management and enforcement measures (including in the operation of the C-VMS) for finfish and other fisheries (including krill)”.*

ASOC looks forward to the Scientific Committee and the Commission responding to the review panel’s report and recommendations.

V. Concluding Remarks

Time is running out for CCAMLR to establish a solid management regime that is based on robust science before the fishery escalates. ASOC urges CCAMLR to take action at this meeting and adopt the following recommendations:

- Enact interim protective measures in Area 48 to protect predators from the effect of localized depletion. A subdivision of the interim catch limit (trigger level) amongst Subareas 48.1, 48.2 and 48.3 of 620,000 tonnes is necessary, following the estimated distribution of krill biomass per subarea. In addition, further protection should be introduced to limit krill fishing in coastal areas (60 n miles from the coast), also matching the estimated density distribution of the krill population in these areas. These measures should remain in place until SSMU catch limits are in place.
- The Scientific Committee should develop, as a matter of urgency, a coordinated research plan for Area 48. This research plan should address the key scientific questions that are pertinent to management decisions at the SSMU level. This research plan should be accompanied by financial investment commitments by CCAMLR Members as needed.
- The Scientific Committee should develop recommendations to adapt the current CEMP to the needs of a feedback management system at the SSMU level. Parallel to this, CCAMLR should develop funding mechanisms to support existing and expanded monitoring, such as a dedicated CEMP Fund.

In addition, ASOC remains concerned about the following issues that are still unresolved and are of high priority for CCAMLR:

- The urgent need to adopt a conservation measure that ensures systematic coverage of international scientific observers for the krill fishery, in accordance with the CCAMLR Scheme of International Scientific Observation.
- The need for a standardized green weight reporting method for krill catches. Also, the requirement to report biological, fine-scale data in accordance with CM 23-05 (2000).
- The need to actively investigate the effect of different fishing gears on krill escapement mortality, in addition to providing the necessary information and methodologies so that this issue can be resolved rapidly.
- The need to develop consistent observer protocols across krill fishing vessels to analyse by-catch of fish and other marine larvae, including a procedure for sampling fish of all sizes and different species.