

Conservation Measure 51-04 (2021)
General measure for exploratory fisheries for *Euphausia superba*
in the Convention Area in the 2021/22 season

Species	krill
Area	various
Season	2021/22
Gear	various

The Commission hereby adopts the following conservation measure:

1. This conservation measure applies to exploratory fisheries for Antarctic krill (*Euphausia superba*), except for such fisheries where the Commission has given specific exemptions, and only to the extent of those exemptions.
2. Fishing in any statistical subarea or division shall cease when the reported catch reaches the specified catch limit¹ and that subarea or division shall be closed to fishing for the remainder of the season. No more than 75% of the catch limit shall be taken within 60 n miles of known breeding colonies of land-based krill-dependent predators.
3. In order to give effect to paragraph 2 above:
 - (i) the precise geographic position of a trawl haul will be determined by the midpoint of the path between the start point and end point of the haul for the purposes of catch and effort reporting;
 - (ii) for the purposes of this conservation measure, fishing is defined as any time that fishing gear, conventional trawls, pumped codends and continuous pumping gear are in the water;
 - (iii) the Secretariat shall notify Contracting Parties participating in these fisheries when the total catch of *Euphausia superba* combined in any statistical subarea or division is likely to reach the specified catch limit, and of the closure of that subarea or division when that limit is reached². No part of a trawl path may lie within a closed subarea or division.
4. The total green weight of krill caught and lost shall be reported.
5. Each vessel participating in the exploratory fisheries for krill during the 2021/22 season shall have one observer appointed in accordance with the CCAMLR Scheme of International Scientific Observation and, where possible, one additional scientific observer, on board throughout all fishing activities within the fishing season.
6. The Data Collection Plan (Annex 51-04/A) and Research Plan (Annex 51-04/B) shall be implemented. Data collected pursuant to the Data Collection and Research Plans for the period up to 1 May 2022 shall be reported to CCAMLR by 1 June 2022 so that the data will be available to the meeting of the Working Group on Ecosystem Monitoring and Management (WG-EMM) in 2022. Such data taken after 1 June 2022 shall be reported to CCAMLR not later than three months after the closure of the fishery, but, where possible, submitted in time for the consideration of the Scientific Committee.
7. Contracting Parties choosing not to participate in the fishery prior to the commencement of the fishery shall inform CCAMLR of changes in their plans no later than one month before the start of the fishery. If, for whatever reason, Contracting Parties are unable to

participate in the fishery, they shall inform CCAMLR no later than one week after finding that they cannot participate. The Secretariat will inform all Contracting Parties immediately after such notification is received.

8. The use of marine mammal exclusion devices on trawls is mandatory.

- ¹ Unless otherwise specified, the catch limit for krill shall be 15 000 tonnes in any statistical subarea or division.
- ² The closure of fisheries is governed by Conservation Measure 31-02.

Annex 51-04/A

Data Collection Plans for exploratory krill fisheries

1. During normal fishing operations, all vessels will comply with the Ten-day Catch and Effort Reporting System (Conservation Measure 23-02) and the Monthly Fine-scale Catch, Effort and Biological Data Reporting Systems (Conservation Measures 23-04 and 23-05), including requirements for the provision of haul-by-haul data.
2. During normal fishing operations, all data specified in the Observer Krill Trawl logbook and [*Scientific Observer's Manual – Krill Fisheries*](#) will be collected.
3. Detailed information on the configuration of every commercial trawl used during normal fishing operations and every research net used during required research operations will be reported to CCAMLR in accordance with Conservation Measure 21-03, Annex 21-03/A, no later than one month after the conclusion of each fishing trip.
4. Data collected from research net hauls shall include:
 - (i) the start and end positions and times of the haul;
 - (ii) the date on which the haul was conducted;
 - (iii) characteristics of the haul such as tow speed, the maximum amount of wire payed out during a tow, the average wire angle during the tow, and calibrated flow-meter values that can be used to provide accurate measures of volume filtered;
 - (iv) an estimate of the total catch (in numbers or weight) of krill; and
 - (v) a random sample of up to 200 krill or the entire catch, whichever is less, to be taken from the haul by the observer – the length, sex and maturity stage should be measured and recorded for all krill according to protocols specified in the Observer Krill Trawl logbook and [*Scientific Observer's Manual – Krill Fisheries*](#).
5. At a minimum, data collected from acoustic transects shall:
 - (i) as far as possible, be recorded following protocols specified for the CCAMLR-2000 Survey;
 - (ii) be linked to position data recorded from a GPS;

- (iii) be continuously recorded and then electronically archived every five days or whenever the vessel moves between exploratory units, whichever occurs most frequently.
- 6. Data collected during research operations conducted by fishing vessels shall be reported to CCAMLR no later than one month after the conclusion of each fishing trip.
- 7. Data collected by Contracting Parties conducting fishery-independent research operations shall, as applicable, be submitted to CCAMLR following guidelines for the submission of CEMP data and data collected during the CCAMLR-2000 Survey. These data shall be submitted in sufficient time to be considered by the next meeting of the Working Group on Ecosystem Monitoring and Management (WG-EMM).

Annex 51-04/B

Research Plans for exploratory krill fisheries

1. Activities under this Research Plan shall not be exempted from any conservation measure in force.
2. This plan applies to all subareas or divisions.
3. A schematic representation of the plans described herein is provided in Figure 1.
4. Contracting Parties intending to conduct exploratory krill fisheries shall choose one of the following four Research and Data Collection Plans and advise CCAMLR of their choice at least one month prior to initiating any fishing activities:
 - (i) predator monitoring;
 - (ii) a research survey conducted from a scientific vessel;
 - (iii) acoustic transects by fishing vessels; or
 - (iv) research trawls by fishing vessels.
5. Where a Contracting Party's vessel collaborates with a research institute to conduct the research plan, the Contracting Party shall identify the collaborating institute.
6. In cases where Contracting Parties select plan (i), predator monitoring, from the list in paragraph 4 above, those Parties shall, as far as possible, follow CEMP Standard Methods. Monitoring shall be conducted for a period of time sufficient both to cover the entire breeding period of land-based predators and to cover the duration of any exploratory fishing that occurs during their breeding season.
7. In cases where Contracting Parties select plan (ii), a research survey conducted from a scientific vessel, from the list in paragraph 4 above, Contracting Parties shall, as far as possible, follow all data collection and analysis protocols specified for the CCAMLR-2000 Survey.
8. In cases where Contracting Parties select plans (iii), acoustic transects by fishing vessels, or (iv), research trawls by fishing vessels, from the list in paragraph 4 above, vessels

participating in exploratory krill fisheries may carry out the research plan either before (preferred option) or after normal exploratory fishing operations. The research requirements must be completed within a fishing season.

9. For the purposes of this conservation measure, exploratory units are defined as areas of 1° latitude by 1° longitude size, and the vertices of these units shall occur at integer points of latitude and longitude within statistical subareas or divisions.
10. If the vessel undertakes plan (iii), acoustic transects by fishing vessels, or plan (iv), research trawls by fishing vessels, before normal exploratory fishing operations, then the research plan shall be conducted as follows:
 - (i) undertake a research plan for the exploratory units based on the area where it intends to fish;
 - (ii) during normal exploratory fishing operations, vessels can choose to fish in any exploratory unit;
 - (iii) complete additional research operations so that the number of exploratory units in which research operations are conducted by the end of fishing is greater than, or equal to, the catch obtained during normal fishing operations divided by 2 000 tonnes;
 - (iv) carry out its work so that exploratory units in which research operations are conducted surround and include the units where normal fishing operations are conducted.
11. If the vessel undertakes plan (iii), acoustic transects by fishing vessels, or plan (iv), research trawls by fishing vessels, after normal exploratory fishing operations, then the research plan shall be conducted as follows:
 - (i) during normal exploratory fishing operations, vessels can choose to fish in any exploratory unit, however, one set of acoustic transects or one set of research hauls must be conducted in each exploratory unit visited during normal fishing operations;
 - (ii) upon completion (either voluntarily or if the catch limit has been reached) of normal exploratory fishing operations, the vessel will transit to the nearest previously unvisited exploratory unit and begin research operations;
 - (iii) the vessel will determine how many previously unvisited exploratory units must be surveyed during research operations by dividing the catch obtained during normal exploratory fishing operations by 2 000 tonnes and rounding that number to the nearest integer;
 - (iv) the vessel will then select a number of exploratory units equal to the number of units determined by the calculation in item 11(ii) above and conduct one set of acoustic transects or one set of research hauls in each of these units;
 - (v) exploratory units visited during research operations must not have been visited during normal exploratory fishing operations;

- (vi) the survey will be conducted in a way that ensures the exploratory units visited during research operations will surround the units in which normal exploratory fishing operations previously occurred.
12. Research hauls shall be conducted with nekton trawls commonly used in scientific research (e.g. IKMT or RMT type nets) that have 4–5 mm mesh, including the codend. Every research haul shall be a randomly located oblique haul made to a depth of 200 m or 25 m above the bottom (whichever is less) with a duration of 0.5 h. A set of research hauls is defined as three research hauls separated by a minimum of 10 n miles.
 13. Acoustic transects shall be conducted using a scientific-quality echosounder collecting information at a minimum frequency of 38 kHz with a minimum observing depth of 200 m. The echosounder should be calibrated prior to the vessel leaving port and, to the extent possible, on the actual fishing ground, and calibration data shall be reported with research transect data. If a vessel is unable to calibrate its echosounder on the fishing grounds:
 - (i) acoustic transects comparable with transects visited in previous fishing seasons should be conducted on subsequent visits;
 - (ii) vessels undertaking continuous trawling should attempt to match some acoustic observations with respective trawl catches since they may be able to trawl more or less immediately after acoustic data have been recorded.

Every acoustic transect shall be a randomly located continuous path travelled at constant speed of 10 knots or less and in a constant direction. The minimum distance between the start and end points of a transect shall be 30 n miles, and a set of acoustic transects is defined as two transects separated by at least 10 n miles.

14. All acoustic transects, both during normal exploratory fishing operations and research operations, shall be accompanied by at least one net haul. These hauls can be conducted either with commercial trawls or with research trawls. Trawls that accompany acoustic transects can be conducted during the transect or immediately after the completion of the transect. In the latter case, the trawl shall be conducted along a previous segment of the transect line. Trawls that accompany acoustic transects shall be at least 0.5 h in duration, or of sufficient time to achieve a representative sample, and the data collected from these hauls shall be the same as those required for research hauls.

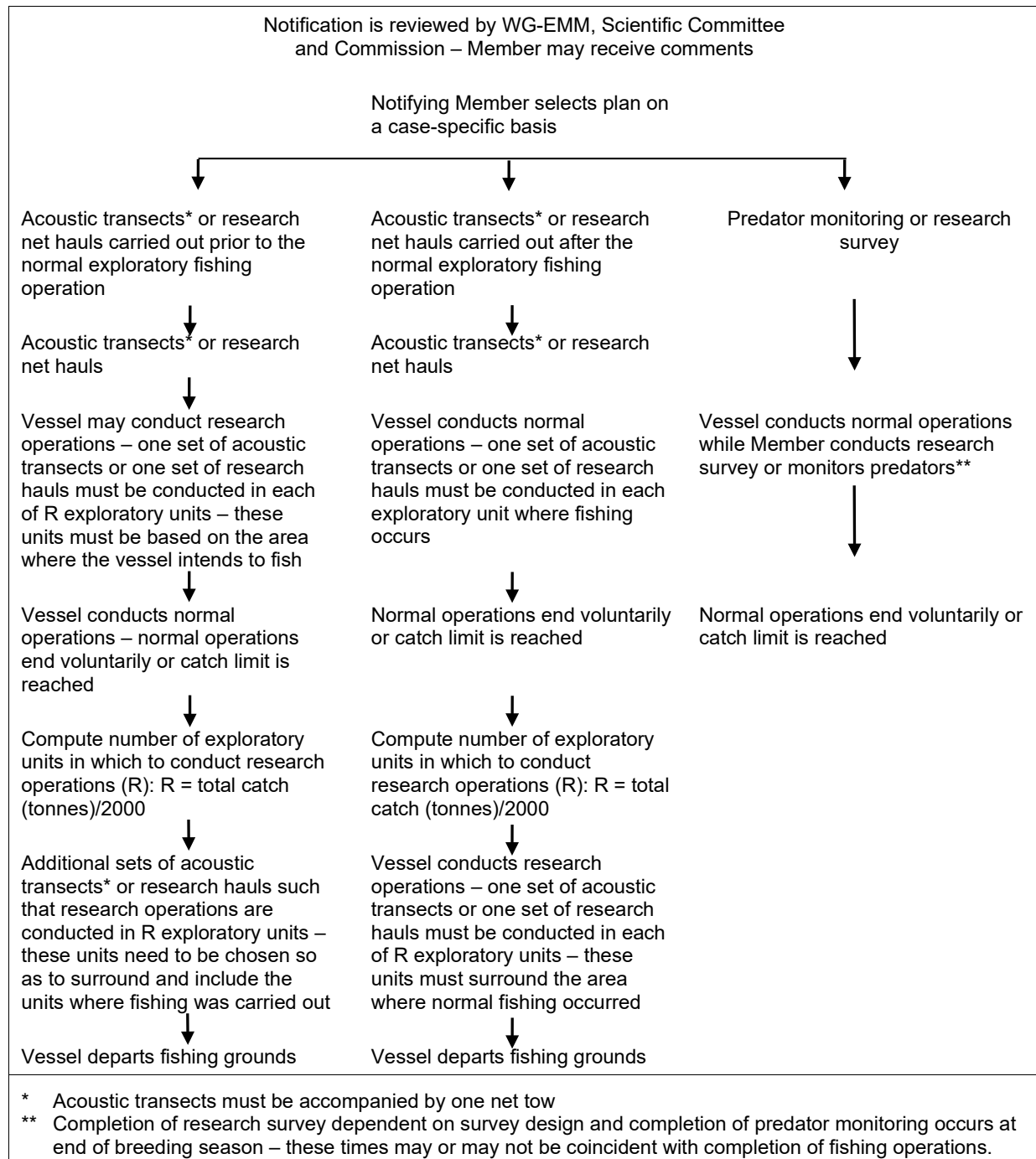


Figure 1: Schematic description of main operations to be conducted during the planning and prosecution of exploratory krill fisheries.