

*Status: Point in time view as at 01/01/2017.*

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## ANNEX V

### CCAMLR CONVENTION AREA

#### PART C

#### ANNEX 21-03/A

### NOTIFICATION OF INTENT TO PARTICIPATE IN A FISHERY FOR *EUPHAUSIA SUPERBA*

#### General information

Member: ...

Fishing season: ...

Name of vessel: ...

Expected level of catch (tonne): ...

Vessel's daily processing capacity (tonnes in green weight): ...

Intended fishing subareas and divisions

*This conservation measure applies to notifications of intentions to fish for krill in Subareas 48.1, 48.2, 48.3 and 48.4 and Divisions 58.4.1 and 58.4.2. Intentions to fish for krill in other subareas and divisions must be notified under Conservation Measure 21-02.*

Subarea/Division	Tick the appropriate boxes
48.1	<input type="checkbox"/>
48.2	<input type="checkbox"/>
48.3	<input type="checkbox"/>
48.4	<input type="checkbox"/>
58.4.1	<input type="checkbox"/>
58.4.2	<input type="checkbox"/>

Fishing technique:	Tick the appropriate boxes
	<input type="checkbox"/> Conventional trawl
	<input type="checkbox"/> Continuous fishing system
	<input type="checkbox"/> Pumping to clear codend
	<input type="checkbox"/> Other method: Please specify

Product types and methods for direct estimation of green weight of krill caught

Product type	Method for direct estimation of green weight of krill caught, where relevant (refer to Annex 21-03/B) <sup>a</sup>
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<sup>a</sup> If the method is not listed in Annex 21-03/B, then please describe in detail

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Whole frozen	
Boiled	
Meal	
Oil	
Other product, please specify	

**a** If the method is not listed in Annex 21-03/B, then please describe in detail

### Net configuration

Net measurements	Net 1		Net 2		Other net(s)	
	Outer <sup>b</sup>	Inner <sup>b</sup>	Outer <sup>b</sup>	Inner <sup>b</sup>	Outer <sup>b</sup>	Inner <sup>b</sup>
Net opening (mouth)						
Maximum vertical opening (m)						
Maximum horizontal opening (m)						
Net circumference at mouth <sup>a</sup> (m)						
Mouth area (m <sup>2</sup> )						
<b>Panel average mesh size<sup>c</sup> (mm)</b>						
1st panel						
2nd panel						
3rd panel						
...						
Final panel (Codend)						

**a** Expected in operational conditions.

**b** Size of outer mesh, and inner mesh where a liner is used.

**c** Inside measurement of stretched mesh based on the procedure in Conservation Measure 22-01.

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Net diagram(s): ...

For each net used, or any change in net configuration, refer to the relevant net diagram in the CCAMLR fishing gear library if available ([www.ccamlr.org/node/74407](http://www.ccamlr.org/node/74407)), or submit a detailed diagram and description to the forthcoming meeting of WG-EMM. Net diagrams must include:

1. Length and width of each trawl panel (in sufficient detail to allow calculation of the angle of each panel with respect to water flow.)
2. Mesh size (inside measurement of stretched mesh based on the procedure in Conservation Measure 22-01), shape (e.g. diamond shape) and material (e.g. polypropylene).
3. Mesh construction (e.g. knotted, fused).
4. Details of streamers used inside the trawl (design, location on panels, indicate 'nil' if streamers are not in use); streamers prevent krill fouling the mesh or escaping.

Marine mammal exclusion device

Device diagram(s): ...

For each type of device used, or any change in device configuration, refer to the relevant diagram in the CCAMLR fishing gear library if available ([www.ccamlr.org/node/74407](http://www.ccamlr.org/node/74407)), or submit a detailed diagram and description to the forthcoming meeting of WG-EMM.

Collection of acoustic data

Provide information on the echosounders and sonars used by the vessel.

Type (e.g. echosounder, sonar)			
Manufacturer			
Model			
Transducer frequencies (kHz)			

Collection of acoustic data (detailed description): ...

Outline steps which will be taken to collect acoustic data to provide information on the distribution and abundance of *Euphausia superba* and other pelagic species such as *myctophiids* and *salps* (SC-CAMLR-XXX, paragraph 2.10)

#### ANNEX 21-03/B

### GUIDELINES FOR ESTIMATING THE GREEN WEIGHT OF KRILL CAUGHT

Method	Equation (kg)	Parameter		
		Description	Type	Estimation method
Unit				
a	Individual haul when using a conventional trawl, or integrated over a six-hour period when using the continuous fishing system.			
b	Individual haul when using a conventional trawl, or a two-hour period when using the continuous fishing system.			

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Holding tank volume	$W * L * H * \rho * 1\ 000$	W = tank width	Constant	Measure at the start of fishing	m
		L = tank length	Constant	Measure at the start of fishing	m
		$\rho$ = volume-to-mass conversion factor	Variable	Volume-to-mass conversion	kg/litre
		H = depth of krill in tank	Haul-specific	Direct observation	m
Flow meter <sup>a</sup>	$V * F_{krill} * \rho$	V = volume of krill and water combined	Haul <sup>a</sup> -specific	Direct observation	litre
		$F_{krill}$ = fraction of krill in the sample	Haul <sup>a</sup> -specific	Flow meter volume correction	—
		$\rho$ = volume-to-mass conversion factor	Variable	Volume-to-mass conversion	kg/litre
Flow meter <sup>b</sup>	$(V * \rho) - M$	V = volume of krill paste	Haul <sup>a</sup> -specific	Direct observation	litre
		M = amount of water added to the process, converted to mass	Haul <sup>a</sup> -specific	Direct observation	kg
		$\rho$ = density of krill paste	Variable	Direct observation	kg/litre
Flow scale	$M * (1 - F)$	M = mass of krill and water combined	Haul <sup>b</sup> -specific	Direct observation	kg
		F = fraction of water in the sample	Variable	Flow scale mass correction	—
Plate tray	$(M - M_{tray}) * N$	$M_{tray}$ = mass of empty tray	Constant	Direct observation	kg

**a** Individual haul when using a conventional trawl, or integrated over a six-hour period when using the continuous fishing system.

**b** Individual haul when using a conventional trawl, or a two-hour period when using the continuous fishing system.

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				prior to fishing	
		M = mean mass of krill and tray combined	Variable	Direct observation, prior to freezing with water drained	kg
		N = number of trays	Haul-specific	Direct observation	—
Meal conversion	$M_{\text{meal}} * \text{MCF}$	$M_{\text{meal}}$ = mass of meal produced	Haul-specific	Direct observation	kg
		MCF = meal conversion factor	Variable	Meal to whole krill conversion	—
Codend volume	$W * H * L * \rho * \pi/4 * 1000$	W = codend width	Constant	Measure at the start of fishing	m
		H = codend height	Constant	Measure at the start of fishing	m
		$\rho$ = volume-to-mass conversion factor	Variable	Volume-to-mass conversion	kg/litre
		L = codend length	Haul-specific	Direct observation	m
Other	Please specify				

**a** Individual haul when using a conventional trawl, or integrated over a six-hour period when using the continuous fishing system.

**b** Individual haul when using a conventional trawl, or a two-hour period when using the continuous fishing system.

### Observation steps and frequency

#### Holding tank volume

At the start of fishing	Measure the width and length of the holding tank (if the tank is not rectangular in shape, then additional measurements may be required; precision $\pm 0,05$ m)
Every month <sup>a</sup>	Estimate the volume-to-mass conversion derived from the drained mass of krill in a known volume (e.g. 10 litres) taken from the holding tank

**a** A new period will commence when the vessel moves to a new subarea or division.

**b** Individual haul when using a conventional trawl, or integrated over a six-hour period when using the continuous fishing system.

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Every haul	Measure the depth of krill in the tank (if krill are held in the tank between hauls, then measure the difference in depth; precision $\pm 0,1$ m)
	Estimate the green weight of krill caught (using equation)
<b>Flow meter<sup>a</sup></b>	
Prior to fishing	Ensure that the flow meter is measuring whole krill (i.e. prior to processing)
More than once per month <sup>a</sup>	Estimate the volume-to-mass conversion ( $\rho$ ) derived from the drained mass of krill in a known volume (e.g. 10 litres) taken from the flow meter
Every haul <sup>b</sup>	Obtain a sample from the flow meter and: measure the volume (e.g. 10 litres) of krill and water combined estimate the flow meter volume correction derived from the drained volume of krill Estimate the green weight of krill caught (using equation)
<b>Flow meter<sup>b</sup></b>	
Prior to fishing	Ensure that both flow meters (one for the krill product and one for the water added) are calibrated (i.e. show the same, correct reading)
Every week <sup>a</sup>	Estimate the density ( $\rho$ ) of the krill product (ground krill paste) by measuring the mass of a known volume of krill product (e.g. 10 litres) taken from the corresponding flow meter
Every haul <sup>b</sup>	Read both flow meters, and calculate the total volumes of the krill product (ground krill paste) and that of the water added; density of the water is assumed to be 1 kg/litre Estimate the green weight of krill caught (using equation)
<b>Flow scale</b>	
Prior to fishing	Ensure that the flow scale is measuring whole krill (i.e. prior to processing)
Every haul <sup>b</sup>	Obtain a sample from the flow scale and:
<b>a</b> A new period will commence when the vessel moves to a new subarea or division.	
<b>b</b> Individual haul when using a conventional trawl, or integrated over a six-hour period when using the continuous fishing system.	

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	measure the mass of krill and water combined
	estimate the flow scale mass correction derived from the drained mass of krill
	Estimate the green weight of krill caught (using equation)
<b>Plate tray</b>	
Prior to fishing	Measure the mass of the tray (if trays vary in design, then measure the mass of each type; precision $\pm 0,1$ kg)
Every haul	Measure the mass of krill and tray combined (precision $\pm 0,1$ kg)
	Count the number of trays used (if trays vary in design, then count the number of trays of each type)
	Estimate the green weight of krill caught (using equation)
<b>Meal conversion</b>	
Every month <sup>a</sup>	Estimate the meal to whole krill conversion by processing 1 000 to 5 000 kg (drained mass) of whole krill
Every haul	Measure the mass of meal produced
	Estimate the green weight of krill caught (using equation)
<b>Codend volume</b>	
At the start of fishing	Measure the width and height of the codend (precision $\pm 0,1$ m)
Every month <sup>a</sup>	Estimate the volume-to-mass conversion derived from the drained mass of krill in a known volume (e.g. 10 litres) taken from the codend
Every haul	Measure the length of codend containing krill (precision $\pm 0,1$ m)
	Estimate the green weight of krill caught (using equation)
<b>a</b>	A new period will commence when the vessel moves to a new subarea or division.
<b>b</b>	Individual haul when using a conventional trawl, or integrated over a six-hour period when using the continuous fishing system.

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