# COMMISSION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

комиссия по сохранению

МОРСКИХ ЖИВЫХ РЕСУРСОВ АНТАРКТИКИ

# CCAMLR

#### COMMISSION POUR LA CONSERVATION DE LA FAUNE ET LA FLORE MARINES DE L'ANTARCTIQUE

COMISIÓN PARA LA CONSERVACIÓN DE LOS RECURSOS VIVOS MARINOS ANTÁRTICOS

SC-CAMLR-XXVII/13
26 September 2008
Original: English
Agenda Item No. 4

### NOTIFICATION OF VULNERABLE MARINE ECOSYSTEMS IN STATISTICAL AREA 58.4.1

Delegation of Australia

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#### Notification of Vulnerable Marine Ecosystems in Statistical Area 58.4.1

#### Submitted by Australia

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#### Abstract

Conservation Measure 22-06 was adopted to ensure that significant adverse impacts of bottom fishing gear on Vulnerable Marine Ecosystems (VMEs) are avoided. In order to satisfy the requirements of CM 22-06 a method is proposed to notify CCAMLR of the presence of VMEs and their location using a simple pro-forma. Two VMEs identified during the Australian CEAMARC-CASO cruise are notified using this form from Statistical Area 58.4.1, SSRU H. The use of 5 nm buffer zones around the location of the observations is proposed to mitigate the risk of spatial uncertainty in the notified position and the deployment of bottom-fishing gear.

#### Introduction

CCAMLR, as a conservation organization with the attributes of an RFMO, has implemented measures to deal with the impacts of bottom fishing on Vulnerable Marine Ecosystems (VMEs). In 2007, noting the requirements of UNGA Resolution 61/105, the Scientific Committee of CCAMLR identified intersessional work needed to meet the requirements of the UNGA Resolution including identifying the method for specifying areas in which evidence of VMEs is detected (SC-CAMLR-XXVI paragraph 4.165(ii)) which was subsequently endorsed by the Commission (CCAMLR-XXVI paragraph 5.13(ii, iv)).

This paper presents a method for notifying VMEs as required in Conservation Measure 22-06 and provides two examples of VMEs identified during the CEAMARC-CASO cruise conducted in Dec 2007-Jan 2008.

#### VMEs identified during CEAMARC-CASO cruise

The CEAMARC (Collaborative East Antarctic Marine Census) program was a joint effort by Australian, Belgian, French and Japanese institutions contributing to the Census of Antarctic Marine Life (CAML). Three cruises were undertaken by Australian, French and Japanese vessels to study plankton, fish and benthic biodiversity (see http://meraustrales.mnhn.fr/). One of the three cruises, the CEAMARC-CASO voyage, was undertaken by the *Aurora Australis* from 16-Dec-2007 to 27-Jan-2008. Eighty-nine stations were sampled using various methods on the continental shelf and slope off George V and Terre Adélie Lands (see maps in Appendices 1 and 2 for details). Using trawl gear with associated digital video and/or stills cameras VMEs were identified at Stations 65 and 79-81. Notification of these VMEs is provided through a simple proforma in Appendices 1 and 2 respectively.

#### Spatial scale, management response and dealing with uncertainty

The evidence of these VMEs is limited to scientific sampling by cameras on transects <2 nm in linear extent. There is a small degree of uncertainty associated with the location and extent of these VMEs because of the difficulty associated with determining the position of the trawl relative to the *Aurora Australis*. It is proposed that a buffer zone of 5 nm around the observational area will be used to mitigate the effect of spatial inaccuracy, particularly if there is also spatial inaccuracy in the known position of bottom-fishing gear when it is deployed.

## Appendix 1: CEAMARC 65 VME Notification

|                                 | EAM               |                 |                       |                     |        |                        |           | ission             | 6-Jul-2          | 2008          |       |
|---------------------------------|-------------------|-----------------|-----------------------|---------------------|--------|------------------------|-----------|--------------------|------------------|---------------|-------|
| Submitting Organization: A      | ustra             | lian            | Anta                  | arctic D            | )ivis  | sion                   | 87e ()    | attou) u           | MA NO            |               |       |
| Review Body                     | THE STATE         |                 |                       | D                   | ate    | of I                   | Revie     | w                  | BIJSILE.         |               |       |
| beautic biodicasity (see        |                   |                 |                       |                     |        |                        |           |                    |                  |               | 1     |
| Type of VME:                    |                   |                 | o sen<br>al m         |                     | 10 G   |                        |           | dimmad<br>, odi vh | ations<br>(1944) |               |       |
| Habitat-forming organisms       | pp off<br>orpody  | 11 110<br>110 A | , 200<br>ni 81        | distrik<br>(sm. 539 |        |                        | nce       | Ident              | ified T          | 'axa          | /( () |
| Large/erect sponges             | rano              | state           | TOU                   | os osk              | V. 3   | X                      | in ba     | Hatonesa:          | dh N' 1          | eag 1         | W     |
| Small/low sponges               | 18 51             | Sally           | TV \$                 | serif to            | DOK.   | 1. 1.21                | MOH       | 18-67              | Man Ta           | 0.00          | 131   |
| Stalked crinoids                |                   |                 | 1                     | .Visv               | 104    | 100                    | 1 13 3    | e i sabib          | maid:            | de y          | m     |
| Gorgonians                      | 14.               |                 |                       |                     |        | X                      |           |                    |                  | T. Va         | - 7   |
| Seawhips                        | 12 1              |                 |                       |                     |        |                        |           |                    |                  | -<br>- 11, 12 | ٠,    |
| Seapens                         | CENTRAL PROPERTY. | 1,7323          | 7 75.81               | adra i              | . 1    | 8                      | 37.18.C.X | established in     | The state of the |               |       |
| Hydrocoral (stylasterinid)      |                   |                 |                       |                     |        | $\overline{\boxtimes}$ |           | Er                 | rina sp          | ).            |       |
| Black coral (antipatharian)     | HITED-            | olitic          | roins.                | na kani             | reil   |                        | STAL      | 7 - Sarty T        | n single         | drima         | 144   |
| Hard coral (scleractinian)      | กรณะรอ            | nous:           | 10.00                 | monh-lla            | 1175   |                        | Sugar     | l'imeira           | mount!           | rri rei       | 18    |
| Low encrusting (bryozoans, asci | idians            | s)              | Nih.                  | of the              | car le | 160                    | 34        | AV seed            | r to tr          | rativs        |       |
| Erect bryozoan                  |                   |                 | insiz                 | Systemal            | Sh     | X                      | svis      | ilas liver         | silv'i           | r signi       | in    |
| Tubeworms rooffe out allegation | 1. 61             | bbau            | . ed                  | Hiv s               | 113    | 100                    | OHE       | nazdo ud           | i helin          | 07185         | on    |
| Bivalve bed award and hi va     | CUITA             | sai .           | laite                 | also si             | 額      | ia                     | b W       | of calualt         | tio w            | omin.         | 10    |
| Brachiopod bed                  |                   |                 | 7 - A150<br>100   110 | 139                 | oib    | :Б                     | di di k   | adw mass           | north a          | d-08          | di    |
| Bioturbators                    |                   |                 |                       |                     |        |                        |           |                    |                  |               |       |
| Other (please state):           | 7.                | 6.74            |                       |                     |        |                        | 93        |                    |                  |               |       |
|                                 |                   |                 |                       |                     |        |                        |           |                    |                  |               |       |
| Substratum                      | 1                 | Prese           | ence                  | Geom                | orpi   | holo                   | gy        |                    | Pre              | sence         | 2     |
| Mud (<0.1 mm)                   |                   |                 |                       | Unrip               | pled   | l/fla                  | t         | 100                |                  | 1.4           |       |
| Fine sediments (0.1-1 mm)       |                   |                 |                       | Curre               | nt ri  | pple                   | ed/dir    | rected             |                  |               |       |
| Coarse sediments (1-4 mm)       |                   | - [.]           |                       | Wave                | ripp   | oled                   |           | 7 11               |                  |               | - 1   |
| Gravel/pebble (4-60 mm)         | - 1               |                 |                       | Irregu              | lar    |                        |           |                    |                  |               | -     |
| Cobble/boulder/slab (60 mm-3 r  | n)                | $\geq$          |                       | Debris              | s flo  | w/r                    | ubble     | banks              |                  |               |       |
| Igneous metamorphic rock (>3 r  | n)                |                 |                       | Subcr               | op     |                        |           |                    |                  |               |       |
| Sedimentary rock (>3 m)         |                   |                 |                       | Low                 | outc   | rop                    | (<1 n     | n)                 |                  | X             | ,     |
| Biogenic                        |                   | $\times$        |                       | High o              | outc   | rop                    | (>1 r     | n)                 |                  |               |       |
|                                 |                   |                 |                       |                     |        |                        |           |                    |                  |               |       |
| Associated with seamount        |                   |                 |                       | Associa             | ted    | with                   | cany      | on syste           | m                |               | 5     |
| Associated with hydrothermal ve | ent               | Ī               |                       |                     |        |                        |           | ease state         |                  |               | 7     |
| Associated with cold seep       |                   | T               |                       | Antarcti            |        |                        |           |                    | - ).             |               | _     |

#### Evidence:

| When was evidence collected?     | 6 Jan 2008                         |                |                |
|----------------------------------|------------------------------------|----------------|----------------|
| How was evidence collected?      | Vessel Aurora Australis            | Cruise CEAL    | MARC-CASO      |
|                                  | Sampling gear Benthic tr           | awl with mou   | nted video     |
| camera                           |                                    |                | TANKS TO SEE   |
| Other comments                   |                                    |                |                |
| Type of evidence                 |                                    |                |                |
| Visual presence of VME (video,   | photographs, diver observat        | ion)           |                |
| Acoustic presence of VME         |                                    |                |                |
| Presence of VME-forming organ    | isms                               |                |                |
| Which organisms? stylasterinid c | oral                               |                |                |
| Collection method trawl          |                                    |                |                |
| Presence of surrogate e.g. VME-a | associated organisms               |                |                |
| Which organisms?                 |                                    |                |                |
| Collection method                |                                    |                |                |
| Presence of habitat feature      | resincte ON A DAALES in outlier in | oras min Lasis | essant Leannil |
| Which habitat feature?           |                                    |                |                |
| Other (please state):            |                                    |                |                |

# Attach photographic evidence if available:



Figure 1. Screen grab from towed video at CEAMARC Station 65, 6 Jan 2008. Extensive hydrocorals



Figure 2. Screen grab from towed video at CEAMARC Station 65, 6 Jan 2008. Extensive hydrocorals and low sponges

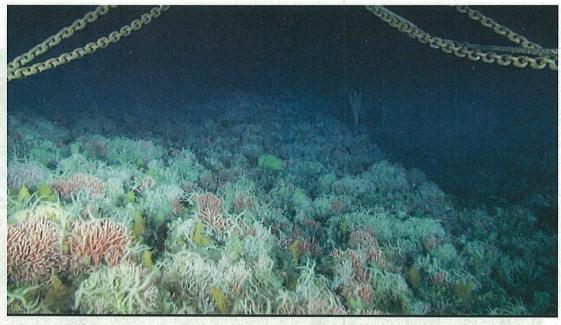


Figure 3. Screen grab from towed video at CEAMARC Station 65, 6 Jan 2008. Extensive hydrocorals and some sponges.

#### Location of Observations

| Position         | Latitude (°S) | Longitude (+°E, -°W) | Precision | Depth (m) | Precision (m) |
|------------------|---------------|----------------------|-----------|-----------|---------------|
| 1 Start of trawl | 65.82783      | 142.995613           |           | 523       |               |
| 2 End of trawl   | 65.771243     | 142.985232           |           | 837       |               |
| 3                |               |                      |           |           | No.           |
| 4                |               |                      |           |           |               |
| 5                |               |                      |           |           |               |
| 6                |               |                      |           |           |               |
| 7                |               |                      |           |           |               |
| 8                |               |                      |           |           |               |

#### Map of Location of Observations

#### Map datum WGS84

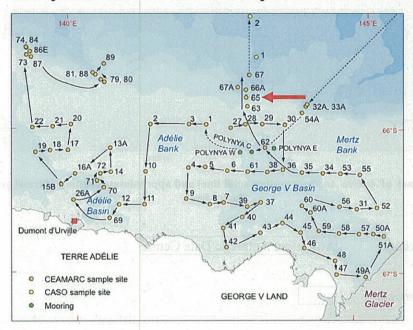


Figure 4. Map of CEAMARC-CASO cruise indicating Station 65.

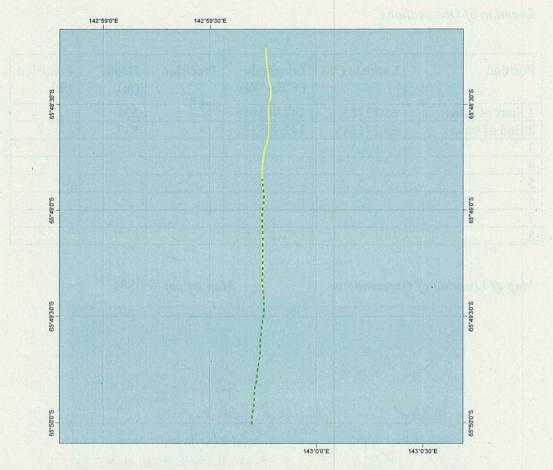


Figure 5. Track of *Aurora Australis* (yellow solid line) and approximate position of trawl gear (green dotted line).

| Data Repository | Australian Antarctic Data Centre |
|-----------------|----------------------------------|
|                 |                                  |
| Other Comments  | NBA 16 BEA 18                    |

# Appendix 2: CEAMARC 79-81 VME Notification Vulnerable Marine Ecosystem Notification

| Name of Site:                 | CEA        | MA      | RC 79                                  | 9-81 D     | ate          | of S      | ubmi        | ssion 6            | 5-Jul-200  | 8             |
|-------------------------------|------------|---------|--|------------|--------------|-----------|-------------|--------------------|--|---------------|
|                               |            |         |  | tarctic I  |              |           |             | allan cesa         | Artis in   | ALL TERM      |
| Review Body                   |            |         |  | D          |              |           | Revien      | , [                |  |               |
| haligit baltusom in 4 lwa     |            | J. A.   |  |            |              |           |             | · · · · · · ·      | 11 , 11  |               |
|                               |            |         |  |            |              |           |             |                    |  |               |
| Type of VME:                  |            |         |  |            |              |           |             |                    |  |               |
|                               |            |         |  |            |              |           |             |                    |  |               |
| Habitat-forming organisms     |            |         |  | 7          | Pr           | eser      | nce         | Identi             | ified Tax  | a             |
| Large/erect sponges           |            |         |  |            |              | X         |             | 17.1               |  |               |
| Small/low sponges             | 1          |         |  |            |              |           | 4 3 5       | 1 1 175            | 7.3.7.   |               |
| Stalked crinoids              |            |         |  |            | 1            |           |             |                    |  |               |
| Gorgonians                    | 1          |         | -                                      |            |              | M         | #1150 C     | Control Control    | THE STATE OF THE S | ash r         |
| Seawhips                      |            |         |  |            |              |           |             |                    |  |               |
| Seapens                       |            | 72.3 46 | ************************************** | an isalima | 100 to 100   | H         | 13.17       | P STORES           | Transition in  | TERRITOR P    |
| Hydrocoral (stylasterinid)    |            |         | -                                      |            |              | Ħ         |             | Fr                 | rina sp.   | day.          |
| Black coral (antipatharian)   |            |         |  |            |              | H         |             | 1.4-71             | ma sp.   | o works       |
| Hard coral (scleractinian)    | _          |         |  |            | -            | H         | . 3 7       | dajo ji kasiri     | विश्वासी क   | er swe si     |
| Low encrusting (bryozoans, as | oidio      | nc)     |  |            |              | H         |             | 11111111111        | D 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | 22-/172       |
|                               | ciuia      | 115)    |  |            |              | $\forall$ |             | 14.778             | e sensing  | 1027          |
| Erect bryozoan Tubeworms      |            |         |  |            |              | +         |             |                    |  |               |
|                               |            | -       |  |            | -            | H         |             |                    |  | 7.            |
| Bivalve bed                   |            |         |  |            | 1            |           | arcera in   | وواجار والا        | the specific   | Braid         |
| Brachiopod bed                | D. C. 1764 |         | S. A. V. C.                            |            | 24/1/38      | El men i  | PARTIES TO  | 1967 X 27800 S 250 |  |               |
| Bioturbators                  |            |         |  | 145 E      | 41800        | 8 8 25    | 1 (30.53 AS |                    |  | Militario III |
| Other (please state):         |            |         |  |            |              |           |             |                    |  |               |
|                               |            |         |  |            |              |           |             |                    |  |               |
| Substratum                    |            | Pre     | esence                                 | Geom       | orn          | holo      | ov          |                    | Prese  | nce           |
| Mud (<0.1 mm)                 |            | 2.73    |  | Unrip      |              |           |             |                    |  |               |
| Fine sediments (0.1-1 mm)     |            |         |  | Curre      |              |           |             | ected              |  |               |
| The seaments (0.1 1 mm)       |            |         |  | scour      |              | pp        | Ju, um      | ollou .            |  |               |
| Coarse sediments (1-4 mm)     | - 5 2      |         |  | Wave       |              | nled      |             |                    |  |               |
| Gravel/pebble (4-60 mm)       |            | 13.55   |  | Irregu     |              | P100      |             |                    |  |               |
| Cobble/boulder/slab (60 mm-3  | m)         |         | M                                      |            |              | w/r       | ubble       | banks              |  |               |
| Igneous metamorphic rock (>3  | 122 A C 4  |         |  | Subcr      |              | 7 **/1    | abbie       | Odinks             |  |               |
| Sedimentary rock (>3 m)       | 111)       | 6       |  | Low        | - management | ron       | (<1 m       | 1                  |  |               |
| Biogenic                      |            |         | M                                      | High       |              |           | _           |                    |  |               |
| Diogenic                      |            | 1 546   |  | Tilgii     | out          | лор       | (-11)       | 1)                 |  |               |
|                               |            |         | 2.7                                    |            |              |           |             |                    |  | - K           |
| Associated with seamount      |            |         |  |            |              |           |             | on syste           |  |               |
| Associated with hydrothermal  | vent       |         |  |            |              |           |             | ease state         | e):  |               |
| A associated with sold scan   |            |         | R 1823 12                              | Antorot    | inh          | otto      | m 33/01     | or                 |  |               |

#### Evidence:

| When was evidence collected?      | 17-Jan-2008                 |               |                |
|-----------------------------------|-----------------------------|---------------|----------------|
| How was evidence collected?       | Vessel Aurora Australis     | Cruise CEAN   | IARC-CASO      |
| of Review                         | Sampling gear Benthic tr    | awl with moun | ted digital    |
| stills camera                     |                             |               |                |
| Other comments                    |                             |               |                |
| Type of evidence                  |                             |               |                |
| Visual presence of VME (video, p  | photographs, diver observat | tion)         |                |
| Acoustic presence of VME          |                             |               |                |
| Presence of VME-forming organi    | sms                         |               | apic sor light |
| Which organisms? stylasterinid co | oral                        |               |                |
| Collection method trawl           |                             |               |                |
| Presence of surrogate e.g. VME-a  | ssociated organisms         |               |                |
| Which organisms?                  |                             |               | 250000         |
| Collection method                 |                             | in una kai    |                |
| Presence of habitat feature       |                             |               |                |
| Which habitat feature?            |                             | ( Actualisms  |                |
| Other (please state):             |                             | ca campraga   |                |
|                                   |                             |               |                |

Attach photographic evidence if available:

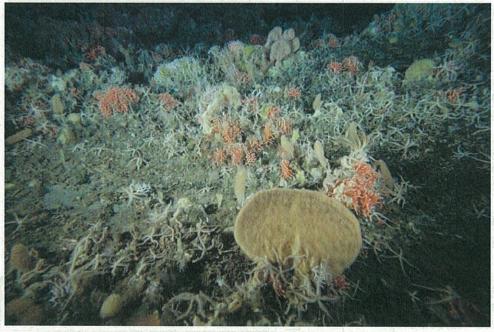


Figure 6. Digital photograph from CEAMARC Station 79-81, 17 Jan 2008. Hydrocorals and sponges.



Figure 7. Digital photograph from CEAMARC Station 79-81, 17 Jan 2008. Hydrocorals, sponges and sea pens.



Figure 8. Digital photograph from CEAMARC Station 79-81, 17 Jan 2008. Extensive hydrocorals and some sponges.

#### Location of Observations

| Position         | Latitude (°S) | Longitude (+°E, -°W) | Precision | Depth (m) | Precision (m) |
|------------------|---------------|----------------------|-----------|-----------|---------------|
| 1 Start of trawl | 65.706372     | 140.593527           |           | 436       |               |
| 2 End of trawl   | 65.61407      | 140.33654            |           | 844       |               |
| 3                |               |                      |           |           |               |
| 4                |               |                      |           |           |               |
| 5                |               |                      |           |           |               |
| 6                |               |                      |           |           |               |
| 7                |               |                      |           |           |               |
| 8                |               |                      |           |           |               |

#### Map of Location of Observations

#### Map Datum WGS84

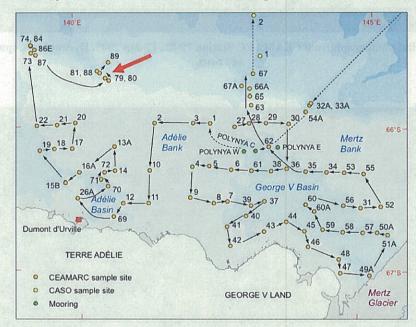


Figure 9. Map of CEAMARC-CASO cruise indicating Stations 79-81.

Figure 8, Digital photograph from CLAMARC States 79-81, 17 Jan 2008; Extensive hydrogerals and some sponges.

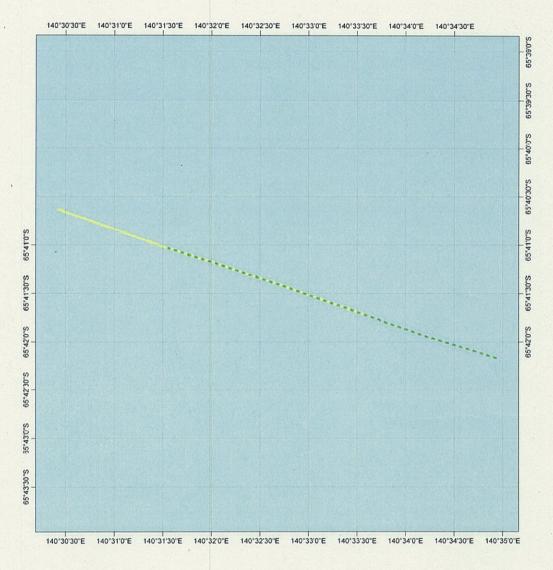


Figure 10. Track of Aurora Australis (yellow solid line) and approximate position of trawl gear (green dotted line).

| Data Repository | Australian Antarctic Data C | entre |
|-----------------|-----------------------------|-------|
|                 |                             |       |
| Other Comments  |                             |       |

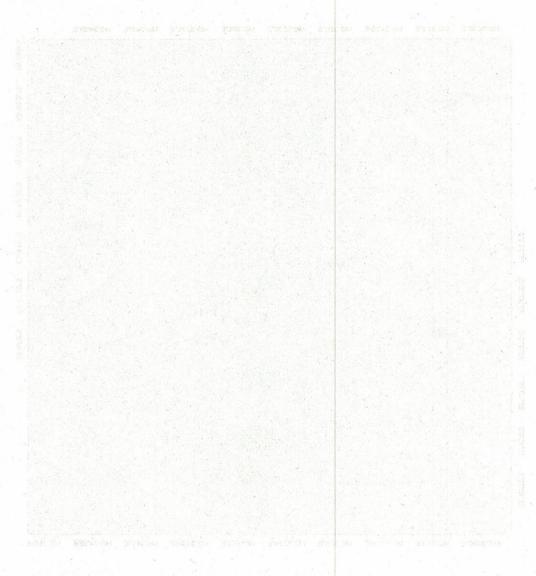


Figure 16. Truck of Aurora Australia (yellow solid line) and approximate position of frawl gene (given detted line).

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|--|---------|--|------|
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