Implications of Antarctic krill fishing in ASMA No. 1 - Admiralty Bay
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Information Paper submitted by ASOC

Abstract
The 2011 meeting of CCAMLR’s Working Group on Ecosystem Monitoring and Management (WG-EMM) noted that in, 2009/10, the krill fishery operated in Admiralty Bay (ASMA No.1). Fishing was not identified or envisaged as an activity consistent with the agreed Code of Conduct when the management plan was adopted by the ATCM, following its approval by CCAMLR. In this context, this information paper reviews the cooperation framework between the ATCM and CCAMLR and the need for better cooperation between both bodies. Particularly with regard to ASMA No.1, this raises issues about the implementation of management plans for ASMAs in relation to the harvesting that marine living resources. The information paper offers a series of recommendations to the CEP, ATCM and CCAMLR to bring more clarity to the process of adopting management plans for ASMAs in order to prevent future events such as in ASMA No. 1 from occurring again.

Introduction
The 2011 meeting of CCAMLR’s Working Group on Ecosystem Monitoring and Management (WG-EMM) noted that in, 2009/10, the krill fishery operated in Admiralty Bay, King George Island (ASMA No.1) (Figures 1& 2). ASMA No.1, Admiralty Bay is a site of significant scientific and ecological interest. Several ATCPs have conducted important research on fish, krill, benthic communities, and seabirds in the ASMA, some of which have been ongoing for several decades. Thirteen species of birds and three species of seals breed in the ASMA, and there is a unique benthic community at Napier Rock. ASMA No.1 has 360 km² in surface area, of which its marine component is of 145 km².

Prior to its adoption by the ATCM in 2006, the management plan was approved by CCAMLR. The Code of Conduct for ASMA No.1, point 8 (ii) included in the management plan, states that:

Activities which may be conducted in the Area, which will not jeopardize the values of the area, and which are consistent with the Code of Conduct are:

- Scientific research;
- Logistical support of scientific research;
- Visitation for the purpose of education or recreation, including tourism;
- Management activities, including maintenance or removal of facilities; and monitoring the implementation of this Management Plan;
- Media, arts, or other official national program visitors

Fishing was not identified or envisaged as an activity consistent with the agreed Code of Conduct when the management plan was adopted by the ATCM, following its approval by CCAMLR. In fact, of the five ASMAs with a marine component approved so far, only ASMA No.7 Southwest Anvers Island and Palmer Basin lists harvesting as a likely activity (Table 1). Fishing in ASMA No.1 is particularly problematic given that part of the reason for the identification of this area as an ASMA is that Admiralty Bay is known as one of the areas with the highest concentrations of breeding seabirds and also includes breeding seals. Furthermore, some of the populations of the seabirds are in decline which has been linked to existing human pressure.

1Lead author Dr. Rodolfo Werner with comments by Jim Barnes, Claire Christian, Alistair Graham, Rob Nicoll, Dr. Ricardo Roura and other ASOC colleagues.
2Antarctic Treaty Consultative Meeting Measure 2, 2006, Management Plan for Antarctic Specially Managed Area No.1 Admiralty Bay, King George Island
3Human impact upon the environment in the vicinity of Arctowski Station, King George Island, Antarctica Katarzyna J. Chwedorzewska and Małgorzata Korczak (2010): Polish Polar Research 31:1, 45–60.
In this context, this information paper reviews the cooperation framework between the ATCM and CCAMLR, the need for better cooperation between both bodies, particularly with regards to ASMA No.1, and the issues this raises in regard to the implementation of management plans for ASMAs in relation to the harvesting of marine living resources.

A review of the cooperation framework

The protection of the marine environment and of marine living resources, including through Marine Protected Areas and Marine Reserves, has long been recognised as desirable and valuable within the agreements and bodies that make up the Antarctic Treaty System. The commitment towards the designation of spatial protection is clearly defined both within the 1991 Protocol of Environmental Protection to the Antarctic Treaty\(^4\) and the 1980 CAMLR Convention\(^5\).

According to the Protocol, any area, including any marine area, may be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area. ASMAs and ASPAs are the building blocks of the Protocol’s Protected Area regime. Activities in those areas may be prohibited, restricted or managed, in accordance with management plans adopted under the provisions of Annex V of the Protocol\(^6\). Most ASMAs contain ASPAs, and activities in the ASMAs could affect the values protected by ASPAs. The competences of, and relationships between the ATCM and CCAMLR have been clarified and affirmed in the Protocol itself and subsequently by Decision 4 (1998) – Marine Protected Areas, and Decision 9 (2005) – Marine Protected Areas and Other Areas of Interest to CCAMLR, respectively.

In particular, any ASMA (or ASPA) designation proposal and associated draft management plan that is put forward to CEP that involves a marine component meeting the criteria of Decision 9 (2005) is required to be referred to CCAMLR by CEP/ATCM for consideration by SC-CAMLR. SC-CAMLR is then required to provide subsequent advice to the Commission which has to decide whether to advise the ATCM/CEP what changes, if any, need to be made to the draft management plan.

How has this process worked in practice? An examination of the management plans for the seven ASMAs that have been adopted to date by the ATCM, following the approval process by CCAMLR as required, (Table 1) shows:

- Five of the seven ASMAs are in coastal locations and have a marine component, ranging from some 5% - 90% of the ASMA surface area.
- ASMAs with a marine component range from 3,275 km\(^2\) to less than 1 km\(^2\). By size, ASMA No.1 is the fifth smaller ASMA. The marine component of ASMA No.1 is of approximately 145 km\(^2\), which is about twenty times smaller than the marine component of ASMA No.7, which has the next largest marine component (and the largest for all ASMAs).
- All but two management plans specifically list the activities that may be conducted in the area. In some management plans the list is illustrative (“Activities that may be conducted in the Area include…”) and in other management plans is more restrictive (“Activities that are or may be conducted within the Area”). For one (inland) ASMA there are no restrictions on types of activities that may be conducted in the Area, although all activities in the Area should be conducted in accordance with the guidelines in the management plan. The management plan for the one remaining ASMA lists the history of human presence in the area and anticipates future activities based on the potential of the area (i.e. science and tourism).
- Most management plans require the activities to be consistent with the Codes of Conduct for Visitors and the provisions of the Management Plan, and/or that the activities would not compromise or jeopardise the values of the Area.
- Only one management plan (ASMA No.7) specifically lists harvesting of marine living resources as a possible activity within the ASMA. This activity, however “…should be conducted in accordance with the provisions of this Management Plan and with due recognition of the important scientific and environmental values of the Area.” Furthermore, it states that “Any such activities should be conducted in coordination with research and other activities taking place, and could include

\(^4\)Madrid Protocol Annex V  
\(^5\)CCAMLR, Article IX.2(g)  
\(^6\) Protocol Annex V, Art. 2.
development of a plan and guidelines that would help to ensure that harvesting activities did not pose a significant risk to the other important values of the Area.”

Overall, the potential harvesting of marine living resources is considered in only one of the five management plans for coastal areas with a marine component pre-approved by CCAMLR prior to being adopted by the ATCM. Even in the case where harvesting of marine resources is contemplated as a possible activity, there are provisions for the coordination of activities and the protection of the values of the area, rather than fishing based on the impromptu decision of a fishing operator.

For this process to deliver useful and timely advice, both from ATCM to CCAMLR and from CCAMLR to ATCM, it is necessary for the original proposal from one or more CEP Parties to include material in the draft management plan that clearly sets out how the proponents think commercial fishing should be dealt with. When agreeing on the management plan, the CEP should indicate its views on whether fishing should be prohibited or allowed in ASMAs and formulate its advice to ATCM. The ATCM should then convey this advice to CCAMLR. However, in practice, the CEP tends to defer any decisions concerning fishing to CCAMLR.

In turn, CCAMLR should use the opportunity of examining management plans by the CEP to flag any interest by CCAMLR members about fishing in the area covered by the management plan. This is what has been done in the case of ASMA No.7 and, presumably, also in all other instances, which makes fishing in ASMA No.1 all the more surprising and inappropriate. Overall, it is apparent that clarity from both the CEP and CCAMLR regarding the content and intent of ASMA management plans with regards to harvesting activities is essential to prevent future events such as in ASMA No.1 from occurring again.

**Fishing in ASMA No.1: the need for better CCAMLR/ATCM cooperation**

So how compatible is krill fishing in ASMA No.1 with the aims and objectives of the ASMA? The overall aim of any ASMA is to manage and coordinate human activities in the area such that the values (including ecological values) of the area can be sustained in the long term. Therefore, the conduct of commercial krill fishing activities in ASMA No.1 (which includes ASPA No.128), as one such human activity, is not automatically consistent with the preservation of the marine biodiversity and research within that area. This is particularly problematic given that Admiralty Bay is one of the areas with the highest concentration of breeding seabirds and also includes breeding seals. Furthermore, some seabird populations (especially penguins) are in decline, which has been linked to existing human pressure (Chwedorzewska and Korczak, 2010).

This is the first instance of reported fishing in an ASMA. In response, WG-EMM 2011 reviewed the Management Plan for ASMA No.1 and concluded that it was unsure if this fishing activity would be considered compatible with the Code of Conduct set out in that Plan.

The Working Group suggested to CCAMLR’s Scientific Committee that it considers advising the CAMLR Commission of this instance of commercial fishing within ASMA No.1 and communicating this information to the ATCM as it could indicate ongoing commercial krill fishing in ASMA No.1.

At its 2011 meeting, the CAMLR Commission noted the information and advice provided by the Scientific Committee and the importance of cooperating with the ATCM but did not take any further action. Notably, the Commission did not consider a precautionary closure of the area to commercial krill fishing pending the outcome of subsequent discussions at the ATCM.

ASOC is concerned that the established mechanism that allows CCAMLR and ATCM to cooperate on the potentially conflictive issue of commercial fishing in ASMAs is not working as well as it should. Given the uncertainty expressed by CCAMLR on how to deal with the Admiralty Bay krill fishing incident and the incompatibility between such fishing and protecting wildlife in the area, an urgent and effective response is needed from both CEP and ATCM. This should include an appropriate and prompt communication to CCAMLR regarding the appropriateness of fishing in ASMA No.1. The issue should be addressed and interim measures agreed in advance of the review of the Management Plan for ASMA No.1, which is now overdue.

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7WG EMM report 2011, para 2.84
The conservation case for close cooperation on ASMA No.1

The Admiralty Bay example provides clear evidence of why an improved level of cooperation between the ATCM and CCAMLR is necessary. There is evidence of serious decline in penguin numbers within Admiralty Bay (Chwedorzewska and Korczak, 2010) but the cause is as yet unknown. Much of this evidence comes from studies conducted in ASPA No.128 Western Shore of Admiralty Bay which is within the larger ASMA No.1. ASPA No.128 contains several nesting areas of Adélie penguin (*Pygoscelis adeliae*), gentoo penguin (*Pygoscelis papua*), and chinstrap penguin (*Pygoscelis antarctica*), which have been regularly and thoroughly studied by Polish scientists from the nearby Arctowski Research Station and by US researchers from the American Ornithological Field Camp “Copacabana” over many years.

In the vicinity of the Polish station *Arctowski* (located near ASPA No.128), numbers of these three species have declined during the thirty years of observations. By 2006, the Adélie penguin population had dropped by 55.9%; chinstrap penguins were close to local extinction, and gentoo penguin numbers decreased by 83.5%. A similar downward trend for Adélie penguin and chinstrap penguin rookeries along the whole western shore of Admiralty Bay was observed, while gentoo penguin numbers had increased in other locations on the western shore of Admiralty Bay.

Chwedorzewska and Korczak (2010) attributed these population changes to local research activities and, to a lesser extent, to tourism. In their analysis they did not consider the potential impact of fishing on these colonies. However, since penguins are known to forage in coastal waters close to the rookeries during the breeding season, any krill fishing that occurs during the summer breeding months in ASMA No.1 might be competing with penguins for food.

ASOC considers that prompt and precautionary action is warranted by both ATCM and CCAMLR to suspend krill fishing in Admiralty Bay.

The need for clear CCAMLR guidance to licensed fishers

It is as yet unknown whether the reported instance of krill fishing in ASMA No.1 was in ignorance or awareness of the designation and the management arrangements. However, information about the location and management plans for all Antarctic ASMAs (and ASPAs) is readily available e.g. from country-specific sources, such as the websites of National Antarctic Programs, and also on the Antarctic Treaty Secretariat website. Such information should be regularly consulted by all fishing operators in the Antarctic.

ASOC suggests that the appropriate way forward is for the ATCM to request that CCAMLR adopts a general conservation measure requiring licensed fishers to operate in conformity with relevant provisions of ASMA management plans. A schedule could then be attached to the general measure that: i) identifies the marine component of each and all relevant designated ASMAs; ii) identifies the relevant components of the associated management plans; and iii) specified appropriate restrictions and conditions applicable to specific fisheries activities, if these are allowed at all. This schedule could then be updated annually by CCAMLR to ensure timely compatibility with any newmanagement plans adopted by the ATCM.

Concluding remarks and recommendations

The report of commercial fishing in ASMA No.1 is an important precedent that highlights deficiencies in marine spatial protection matters. It also provides a timely opportunity to constructively resolve problems identified. It is ASOC’s view that potential impacts on the wildlife values underpinning designation warrant total closure of the Area to commercial fishing.

ASOC recommends:

- CEP to undertake an immediate review of the Management Plan for ASMA No.1 and clarify that commercial fishing should be prohibited within the Area. Until the review is completed, commercial fishing should be temporarily prohibited in the ASMA, and the CEP should communicate this view forthwith to CCAMLR.

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CEP to advise the ATCM to request that CCAMLR implement a precautionary closure to fishing of the marine components of all relevant ASMAs\(^9\), pending advice from the ATCM as management plans come up for periodic review;

CEP to advise ATCM to request that CCAMLR consider adopting a Conservation Measure that obliges Members to ensure its vessels comply with the Codes of Conduct in Management Plans for ASMAs with a schedule that, for each Area: provides a boundary and locality map; reproduces the Code of Conduct from the relevant management plan; and sets conditions applicable to specific fisheries activities in and around that Area; and

ATCM to request that, in the future, the CCAMLR Secretariat immediately inform the ATCM Secretariat of any reported instances of commercial fishing in ASMAs and that the ATCM Secretariat be asked to immediately circulate any such CCAMLR communication to ATCPs.

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\(^9\) It is assumed that no fishing would take place within ASPAs, as fishing would be incompatible with the preservation of environmental and scientific values for which the vast majority of ASPAs are designated, and at present most ASPAs are very small in surface area. However, ASPAs should be included in recommendations if required for a matter of clarity, in order to ensure that no fishing takes place there.
Figure 1: Location of ASMA No.1 in King George Island, Antarctic Peninsula

Figure 2: ASMA No.1 Admiralty Bay, King George Island
<table>
<thead>
<tr>
<th>ASMA No.</th>
<th>Activities in ASMA management plans</th>
<th>Characteristics</th>
<th>Scope of activities</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASMA No.1</td>
<td>Coastal, 360 km², ca. 40% marine component.</td>
<td>Activities which may be conducted in the Area, which will not jeopardize the values of the area, and which are consistent with the Code of Conduct.</td>
<td>Scientific research; logistical support of scientific research; visitation for education or recreation, including tourism; management activities; media, arts, or other official national program visitors.</td>
<td></td>
</tr>
<tr>
<td>ASMA No.2</td>
<td>Inland, 15,000 km², includes shoreline.</td>
<td>Activities that may be conducted in the Area.</td>
<td>Include scientific research; operations in support of science; media, arts, education or other official national program visitors; management activities including maintenance or removal of facilities; and tourism visits within the Visitor Zone.</td>
<td></td>
</tr>
<tr>
<td>ASMA No.3</td>
<td>Coastal, ca. 1 km², ca. 5% marine component.</td>
<td>Activities which are or may be conducted within the Area.</td>
<td>Historic conservation and archaeological work; research, including scientific research; visitation for education or recreation, including tourism; essential maintenance of non-historic infrastructure; removal of non-historic objects.</td>
<td></td>
</tr>
<tr>
<td>ASMA No.4</td>
<td>Coastal, 144 km², ca. 30% marine component.</td>
<td>Activities that are or may be conducted within the Area, including restrictions on time or place.</td>
<td>Scientific research, logistical support of scientific research; management activities; tourist or private expedition visits.</td>
<td></td>
</tr>
<tr>
<td>ASMA No.5</td>
<td>Inland, 26,400 km².</td>
<td>Activities that may be conducted in the Area.</td>
<td>There are no restrictions on types of activities that may be conducted in the Area; however, all activities in the Area should be conducted in accordance with the guidelines in the management plan.</td>
<td></td>
</tr>
<tr>
<td>ASMA No.6</td>
<td>Coastal, 80 km², ca. 50% marine component.</td>
<td>Human presence.</td>
<td>The management plan lists the area’s history of human visitation; science; tourism; associated human impacts; and future activities, including the potential for further scientific research and tourist visits.</td>
<td></td>
</tr>
<tr>
<td>ASMA No.7</td>
<td>Coastal, 3,275 km², ca. 90% marine component.</td>
<td>Activities that are or may be conducted within the Area.</td>
<td>Include scientific research, or the logistical support of scientific research, management activities; tourist or private expedition visits; media, arts, education or other official national program visitors; harvesting of marine living resources.</td>
<td></td>
</tr>
</tbody>
</table>