Australian Government

Australian Fisheries Management Authority

# ANNUAL STATUS REPORT

## CCAMLR New and Exploratory fisheries

**September 2008**

**This report has been prepared by AFMA for consideration by the Department of the Environment, Water, Heritage and the Arts in relation to an approved Wildlife Trade Operation under the *Environment Protection and Biodiversity Act 1999* (EPBC Act).**

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# Introduction

This assessment covers fishing methods in New and Exploratory fisheries in waters under the jurisdiction of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). CCAMLR New and Exploratory fisheries were declared an approved Wildlife Trade Operation (WTO) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 28 November 2005. A copy of the letter to AFMA, including the conditions and recommendations can be found at:
http://www.environment.gov.au/coasts/fisheries/commonwealth/

# 1 Description of the fishery

The New and Exploratory fisheries covered by this assessment lie in the region administered by CCAMLR. The Heard Island and McDonald Islands (HIMI) Fishery which also occurs within the CCAMLR region has been strategically assessed at the time a formal management plan was introduced for the HIMI Fishery in 2002, and further re-assessed in May 2007. The HIMI Fishery has received an exempt status until May 2012.

The assessment for New and Exploratory fisheries in the CCAMLR region covers waters in the CCAMLR region where Australia has sovereignty claims. This includes waters in CCAMLR statistical areas 88.1, 58.4.1, 58.4.2, 58.4.3a, 58.4.3b and 58.4.4. The map at Figure 1 shows the CCAMLR statistical areas and the maps at Figures 2 and 3 shows the Antarctica claims and treaty boundaries.

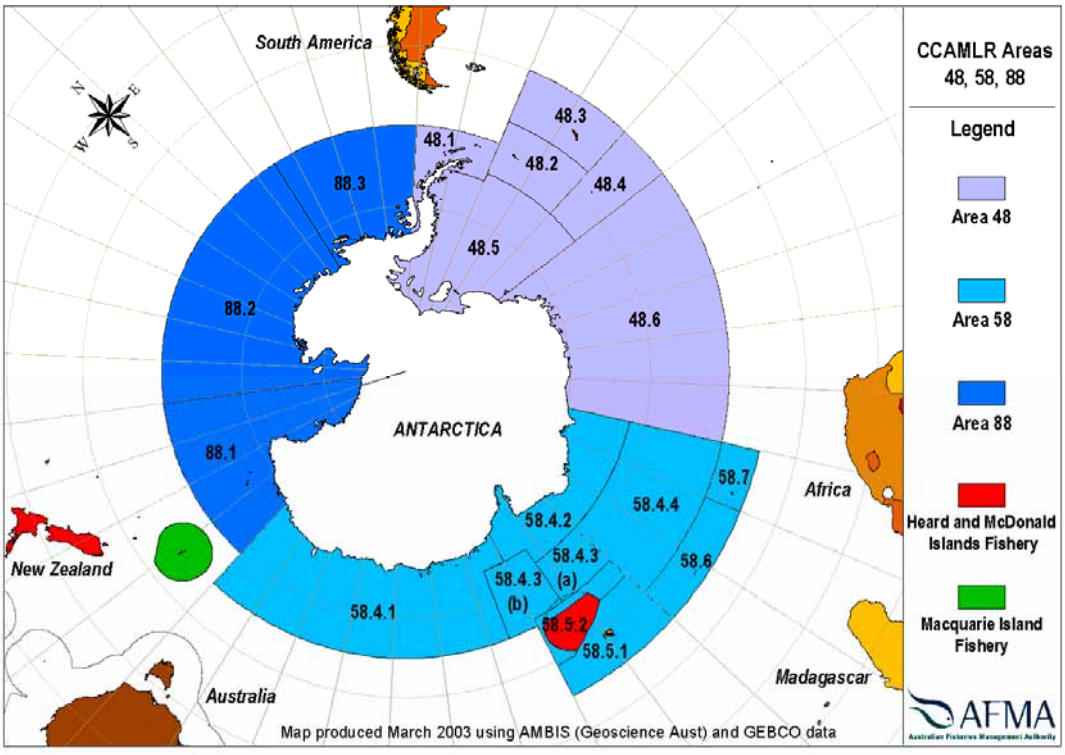


**Figure 1: Location of the HIMI Fishery within the CCAMLR Convention area**

## 1.1 Overview of CCAMLR

The Convention on the Conservation of Antarctic Marine Living Resources (the Convention) was established in 1980 under the Antarctic Treaty system to provide a management regime for conserving the Antarctic ecosystem. CCAMLR was established under this Convention as a policy and regulatory body to implement the objective of conserving the Antarctic ecosystem, including rational use.

The Convention arose in response to concerns about the potential for a krill fishery to significantly affect the Antarctic ecosystem, which is largely dependent on krill, and a desire to avoid the overexploitation and other problems that had occurred in fisheries in many other regions.

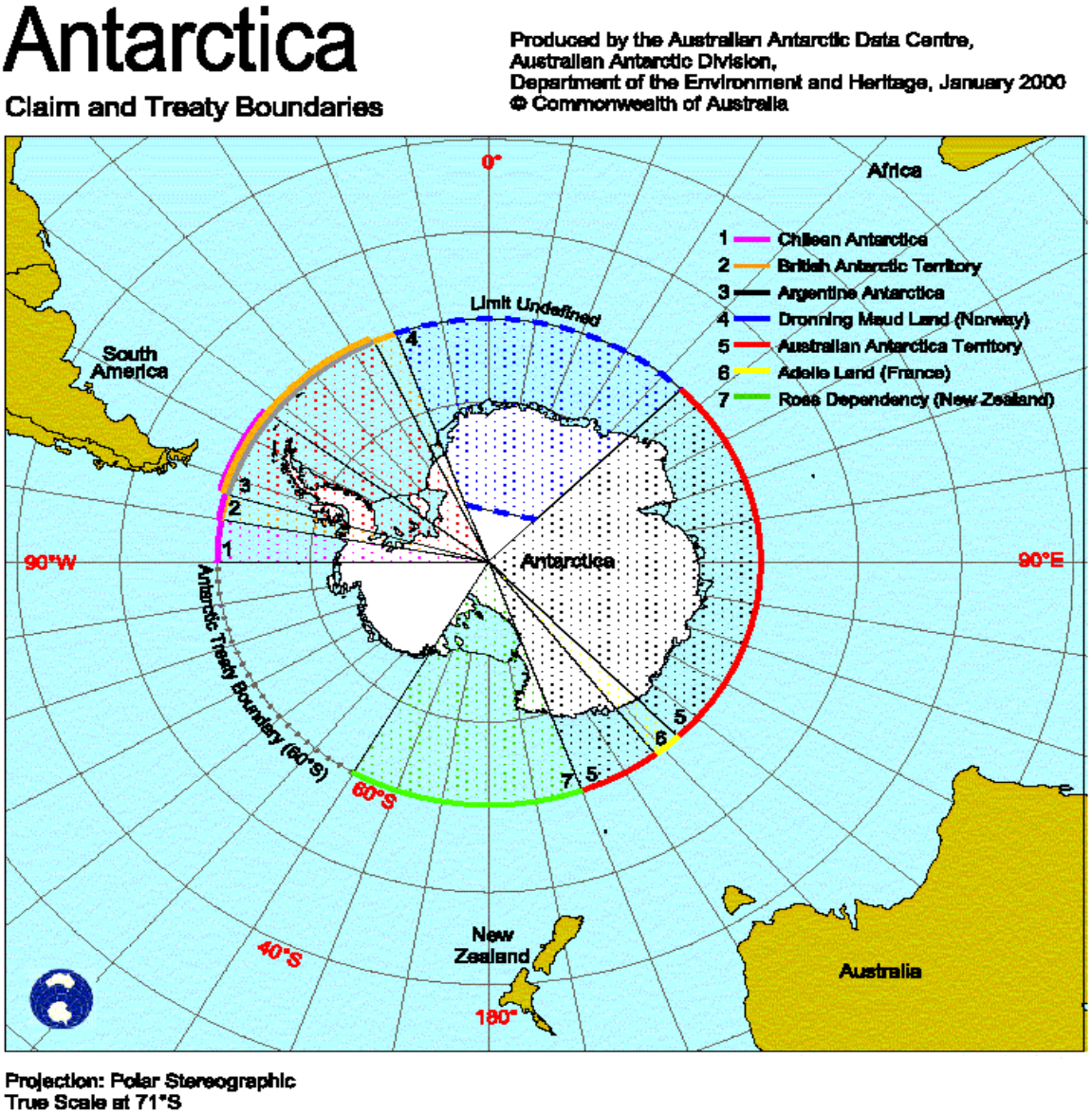


**Figure 2: Antarctica claim and treaty boundaries**

The area of application of the Convention is the region south of a line which approximates the position of the Antarctic Convergence, the place where colder polar waters meet more temperate waters to the north and which forms an effective biological barrier to most Southern Ocean species. The objective of the Convention is the conservation of Antarctic marine living resources, where conservation is defined to include rational use.

The Convention was the first international regional agreement to stipulate a precautionary and ecosystem-based management approach. This approach requires that management consider the effects of any harvesting on dependent and associated species, not just the target species and those ecological relationships are maintained.

The Convention applies to all marine living resources in the southern oceans apart from seals and cetaceans, which are managed under the jurisdiction of the Convention for the Conservation of Antarctic Seals and the International Whaling Commission respectively.

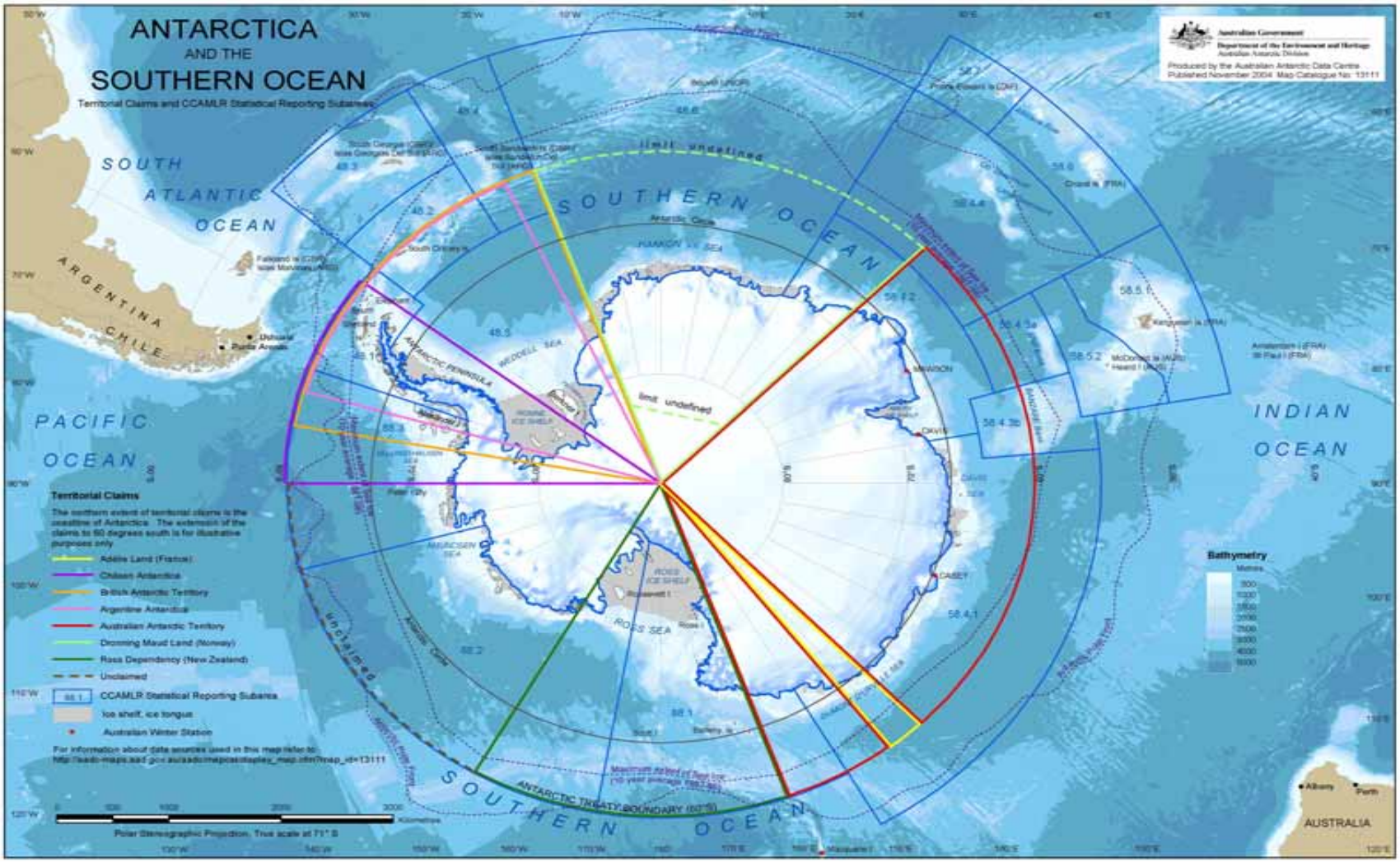


**Figure 3: Antarctica claim and treaty boundaries**

As illustrated in Figure 1, the Convention area is divided into three internationally agreed statistical areas:

- Area 48 (Atlantic Ocean sector)
- Area 58 (Indian Ocean sector)
- Area 88 (Pacific Ocean sector)

These are further divided into sub-areas and divisions on oceanographic grounds. For example, Statistical Division 58.5.2, within which the HIMI Fishery lies, is a sub-area of Area 58.

Australia is one of 25 members of CCAMLR, each of whom pays an annual fee and has voting rights. Decisions of CCAMLR are by consensus. Nine other States have ratified the Convention but are not members of CCAMLR[1].

The principal institutional elements of CCAMLR are the Commission (a policy-making and regulatory body) and the Scientific Committee (a scientific body providing management advice). This management advice is based on assessments conducted by the two working groups of the Scientific Committee. One of these, the Working Group on Ecosystem Monitoring and Management (WG-EMM), is primarily concerned with assessing and developing advice on the krill fishery, and analysing data from the CCAMLR Ecosystem Monitoring Program.

The other, the Working Group on Fish Stock Assessment (WG-FSA), develops management advice on fisheries other than the krill fishery. It also assesses the incidental mortality of seabirds and interactions of longline fisheries with other non-target species, such as cetaceans. The advice from the working groups is submitted to the Scientific Committee, which may refine it by taking into account additional information available to the Committee. The management advice is then referred to the Commission for consideration.

CCAMLR meets annually in Hobart for a period of two weeks commencing in late October. The above working groups and sub-committees meet either immediately prior to or concurrently with CCAMLR. At these meetings members examine, among other things, the previous year's fishing activities within the Convention area, data collected, scientific research, applications for New and Exploratory fisheries and review the Conservation Measures in place to regulate fishing activities.

Meetings of CCAMLR and its committees are restricted to delegates from member countries. The Australian delegation to CCAMLR is led by the Australian Antarctic Division (AAD) and consists of representatives from AFMA, the Department of Foreign Affairs and Trade, the Department of Agriculture, Fisheries and Forestry, the Australian Customs Service, State/Territory governments, industry and conservation interests. Australia plays a leading role at these meetings.

Extensive consultation is undertaken by the Australian Government to develop a national position on CCAMLR issues. These positions are developed in consultation with stakeholders, mainly through meetings of the CCAMLR Consultative Forum (CCF). The CCF is convened by AAD and includes representatives from government, and non-government organisations, including industry, and meets three times a year.

More information on CCAMLR can be found at www.ccamlr.org

## 1.2 What are New and Exploratory fisheries?

A **new fishery** as defined under CCAMLR Conservation Measure 21-01 (2006) is a fishery for a species using a particular fishing method in a statistical sub-area or division for which:

- information on the distribution, abundance, demography, potential yield and stock identity from comprehensive research/surveys or exploratory fishing have not been identified or submitted to CCAMLR; or

[1] Members of CCAMLR, as at November 2007, are: Argentina, Australia, Belgium, Brazil, Chile, People's Republic of China, European Community, France, Germany, India, Italy, Japan, Republic of Korea, Namibia, New Zealand, Norway, Poland, Russian Federation, South Africa, Spain, Sweden, Ukraine, the United Kingdom, the United States of America and Uruguay. States that have ratified the Convention but which are not members of CCAMLR are Bulgaria, Canada, Cook Islands, Finland, Greece, Mauritius, Netherlands, Peru and Vanuatu.

- catch and effort data have never been submitted to CCAMLR; or
- catch and effort data from the two most recent seasons in which fishing occurred have not been submitted.

An **exploratory fishery** as defined under Conservation Measure 21-02 (2006) is a fishery which:

- was previously defined as 'new fishery', as defined by Conservation Measure 21-01; and
- continues to be classified as such until sufficient information is available to:
  - evaluate the distribution, abundance, and demography of the target species, leading to an estimate of the fisheries potential yield; and/or
  - review the fisheries potential impacts on dependent and related species; and/or
  - allow the Scientific Committee to formulate and provide advice to CCAMLR on appropriate harvest catch levels, as well as effort levels and fishing gear, where appropriate.

Copies of the relevant CCAMLR Conservation Measures for the 2007/08 season are provided at Attachment 1.

## 1.3 Target and bycatch species

The target species will depend on the CCAMLR area being fished. The principle species which may be targeted are Patagonian toothfish (*Dissostichus eleginoides*), Antarctic toothfish (*Dissostichus mawsoni*), and spiny icefish (*Chaenodraco wilsoni*).

### *Patagonian toothfish (Dissostichus eleginoides)*

The Patagonian toothfish is also known as mero, Chilean sea bass and black hake and is found in sub-Antarctic waters on shelves around islands and submarine banks. They are primarily bottom-living, in depths of 300 to 2000 metres, although move off the bottom on occasion to feed.

Patagonian toothfish reach sexual maturity between 70 and 95 centimetres in length at around 10 years old. They grow up to 2.2 metres in length and 100 kilograms in weight. As yet, the maximum age of this species is unknown, however, initial estimates indicate that Patagonian toothfish live up to 50 years. Trawl operators target, on average, four to nine year old Patagonian toothfish. The older fish are thought to inhabit deeper waters and canyons which are less accessible to trawl gear. At harvest by trawlers, the average toothfish is 80 centimetres long and around 3.5 kilograms in weight.

### *Antarctic toothfish (Dissostichus mawsoni)*

Much less is known about Antarctic toothfish than Patagonian toothfish, although their biology appears similar as far as can be judged. Antarctic toothfish is endemic to the seas around Antarctica (circumpolar at latitudes higher than 55º South) and is distributed all around the Antarctic Continent on the continental shelf and slope and to some extent seaward. The boundary between the distribution of the two toothfish species is generally not well known. Antarctic toothfish is an engibenthic species that is usually caught near the bottom in depths of 88-1600 metres.

Reflecting its higher latitude distribution, Antarctic toothfish has antifreeze proteins in its blood and tissues, whereas Patagonian toothfish does not.

Fisheries for Antarctic toothfish were much slower to develop than those for Patagonian toothfish, principally because of the much more difficult conditions for exploration and fishing in the high latitudes. A fishery began in the Ross Sea in 1998, initially by New Zealand longliners but in recent years vessels from several nations have participated.

### *Spiny icefish (Chaenodraco wilsoni)*

The spiny icefish has a circum Antarctic distribution on the continental shelf. Northernmost records are from the vicinity of the South Orkney Islands and Antarctic Peninsula (around 60º South). The depth range is 200-800 metres with post larvae and pelagic juveniles also occurring in the upper 100 metres.

It is common in shallower waters of the continental shelf, especially on banks less than 250 metres depth in area where local upwelling increase food supply

Spiny icefish matures at about 23 centimetres and probably spawns in the winter. It can reach a maximum length of 43 centimetres.

### *Bycatch species*

Each year CCAMLR determines the catch and bycatch limits which apply to New and Exploratory fisheries. These are detailed in CCAMLR Conservation Measure 33-03 (2007) which is provided in Attachment 1.

Australian operators have undertaken limited activity in New and Exploratory fisheries. Annual precautionary catch limits are set for all other fish bycatch species. The bycatch taken has been well below the levels determined by CCAMLR. The principle bycatch species taken have been skates and rays (rajids) and grenadiers (macrourids).

Observer data from all New and Exploratory fisheries conducted by Australian vessels indicates 50 different catch categories, 35 for longlining and 30 for trawling. These categories include species entries, but in some cases only family entires or common names. Of the other entries, only 10 totalled more than 100kg. The totals of the other bycatch entries ranged from 87 kgs to 0.01 kg.

Fishing Permits in New and Exploratory fisheries require that all bycatch be retained (with some exceptions) in order to limit possible interactions with marine mammals and seabirds. All retained bycatch is either frozen or processed into fish meal. Skates, sharks, jellyfish, sponges, crabs and coral are returned to the ocean as these species either have a high chance of survival, do not attract seabirds and marine mammals when discarded or cannot be effectively processed through the meal plant.

## 1.4 Management arrangements employed in the Fishery

CCAMLR New and Exploratory fisheries are managed under the *Fisheries Management Act 1991*, with the *Antarctic Marine Living Resources Conservation Act 1981* implementing Australia's international obligations under CCAMLR. AFMA and AAD respectively are charged with administration of these Acts. The *Fisheries Management Act 1991* takes precedence over the *Antarctic Marine Living Resources Conservation Act 1981*, where both apply.

### *CCAMLR*

As outlined under Section 1.1, the Convention was established under the Antarctic Treaty System in 1980. The Convention provides a regime for the conservation of Antarctic marine living resources, which is implemented by the CCAMLR. The need for a regime arose in response to concern about the Antarctic ecosystem, and a desire to avoid the overexploitation that had occurred in fisheries in many other regions.

CCAMLR was the first international regional agreement to stipulate a precautionary ecosystem management approach. This approach requires that management considers the effects of any harvesting on dependant and associated species, not just the target species, and that ecological relationships be maintained.

A number of CCAMLR sub-Committees report and make recommendations to the Commission, including a Scientific Committee, which has two working groups:

- the Working Group on Fish Stock Assessment (WG-FSA) develops management advice, based on information provided by Australian scientists
- the Working Group on Ecosystem Monitoring and Management (WG-EMM) is concerned with analysing data from the CCAMLR Ecosystem Monitoring Program.

Advice from the Working Groups is submitted to the Scientific Committee, which may also take into account any additional information. The Scientific Committee then refers management advice to the Commission for consideration. Management measures agreed to by the Commission are reflected in Conservation Measures. CCAMLR meets annually in Hobart for a period of two weeks commencing in late October to discuss issues and organise management arrangements for the coming fishing seasons. Australia plays a leading role at CCAMLR and meetings of the Commission, the Scientific Committee and each of the Working Groups.

Australia can determine management measures for the HIMI Fishery in addition to those set by CCAMLR. Australia seeks assistance of other CCAMLR Members in ensuring their nationals are aware of the boundaries of the Exclusive Economic Zones around HIMI, which extends into northern region of Elan Bank (Statistical Division 58.4.3a) and BANZARE Bank (Statistical Division 58.4.3b), and the need for prior permission to fish there. Under CCAMLR, each member country is responsible for regulating their nationals and flagged vessels.

More information on CCAMLR can be found at Section 4 and at www.ccamlr.org.

### *AFMA management*

Output controls are the primary means of controlling the level of catch, and are set as annual total allowable catches (TACs) for target and some bycatch species. The fisheries are competitive TACs which allow for a number of vessels from CCAMLR member countries to fish the TAC set for the particular CCAMLR statistical area. Should a catch limit for a target or bycatch species be reached the fishery is closed. The CCAMLR Secretariat monitors the catch taken by various vessels against the TAC and is responsible for closing the Fishery once the TAC is approached.

Some input controls are also used to minimise bycatch and the impact on the broader marine environment, which include seasonal restrictions for longline operations, fishing depth restrictions, move-on provisions where bycatch exceeds agreed levels and area closures.

Additionally two observers are placed on board all trips to monitor compliance with management arrangements and collect environmental, ecological and fisheries data. There is a prohibition on discharging offal and other bycatch to avoid incidental interactions with seabirds and mammals.

Australia may set these catch limits at a level lower than that set by CCAMLR but cannot exceed the CCAMLR set TAC. Australia is legally bound to comply with all Conservation Measures and has consistently set environmental standards over and above those required by CCAMLR. Many of the additional management measures adopted by Australia have since been adopted by CCAMLR.

Catch of both target and bycatch species is monitored by AFMA's Monitoring Section using a combination of daily shot by shot catch reports and information from the observers. Catch reports are submitted to CCAMLR every 10 days, and are further verified when the vessel unloads and catch weights are checked by Australian compliance officers.

## 1.5 Fishing methods employed (gear types)

The principal method used and is likely to continue to be used by Australian vessels is demersal longlining. Longlining has been conducted by Australian vessels in 58.4.2 and 58.4.3b. Trawling has been used in the past by Australian vessels in CCAMLR statistical areas 58.4.2, 58.4.3a and 58.4.3b (see Figure 1)

## *Demersal trawling*

Figure 4 illustrates the configuration of demersal trawl fishing gear. Demersal trawlers tow a net along the ocean floor, in depths up to about 1,500 metres. The net is towed behind the vessel by long wires (the warps) and is deployed and retrieved from the stern of the vessel by winches. The net opening (the mouth) is spread horizontally by the outward force acting on the otter boards as they are towed through the water. The bottom of the net opening, the footrope, is weighted bringing the net opening close to the bottom and has ground gear, principally bobbins, attached to enable the gear to be towed across the substrate with minimal hookups. The top of the mouth, the headline, is lifted vertically by floats. Vessels are generally equipped with electronic units to allow the proximity of the nets to the seabed to be monitored.

Demersal trawling relies on herding fish inward toward the path of the oncoming net mouth, rather than the speed of the tow. As the fish swim away from the warps and the net wings, they are enclosed and fall back towards the tapered body of the net. As the gear is hauled up toward the vessel the fish are contained in the end section of the net, the codend, which is fastened with a rope to release the catch on the vessel deck.

In the Fishery, demersal trawl nets are limited to a minimum mesh size of 120 mm when targeting Patagonian toothfish and 90 mm when targeting mackerel icefish to enable juvenile fish to escape the net.

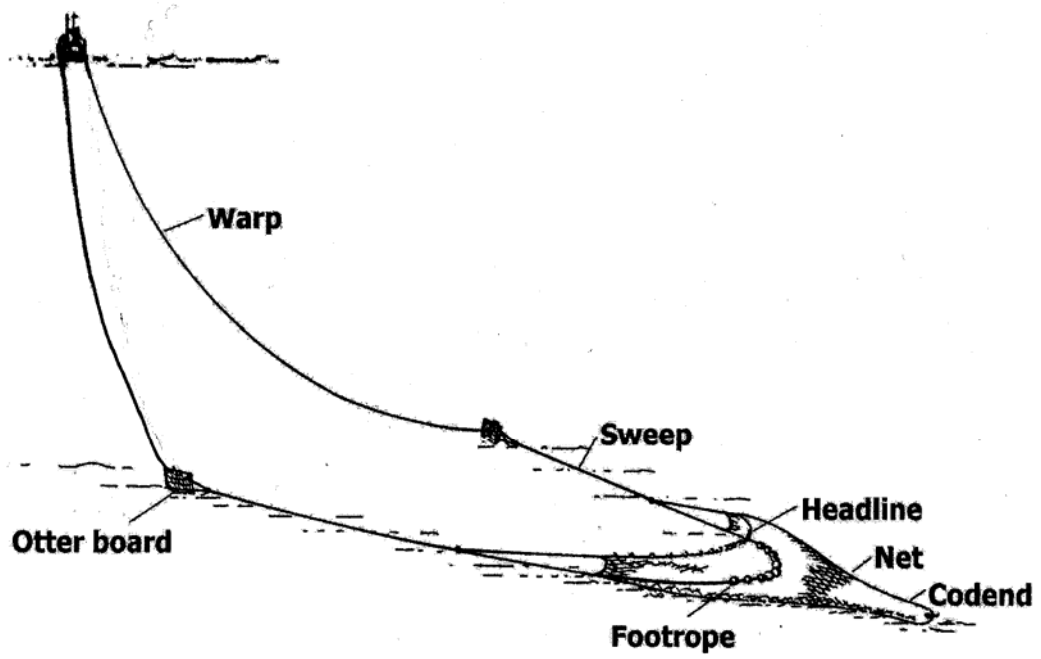


**Figure 4: Demersal trawl (adapted from FAO, 1987)**

## *Midwater trawling*

Figure 5 illustrates the configuration of midwater trawl fishing gear. When midwater trawling, a net similar to (but typically larger than) a demersal trawl is towed in the mid water column. The net is spread horizontally and vertically like that of the demersal trawler, however, it does not have the same ground gear as it is not designed to touch the seafloor. Midwater trawl nets are also equipped with electronic units to allow monitoring of the net in the water column. Midwater trawling in the Fishery occurs at depths of around 350 metres.

Like demersal trawling, midwater trawling relies on the herding of fish inward toward the mouth of the net where they are scooped up and are ultimately trapped in the codend. In the Fishery, midwater trawling is primarily used to target mackerel icefish, and net mesh sizes are limited to a minimum of 90 mm.

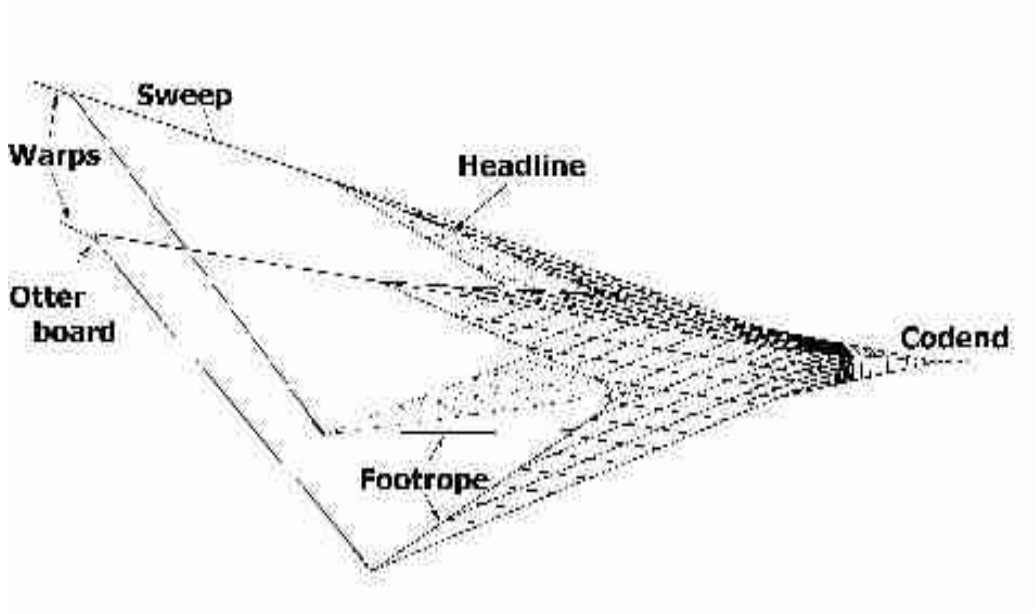


**Figure 5: Mid water trawling (Hampidjan netmakers )**

## *Demersal longlining*

The autoline (or Mustad) system is most commonly used by 'Norwegian-style' vessels and typically has a simple configuration (see Figure 6). Essentially, the system consists of a single, long 'backbone' or 'mother-line' (usually 9-12 mm diameter), containing several thousand, short (~ 400 mm), evenly-spaced 'branch-lines' (or 'snoods') each with a baited hook on the terminal end. Each snood is attached via a collar to the main-line in a manner that allows the snood to rotate 360º around the main-line, as well as 360º about a swivel. Snoods are spaced 1-2 m apart (typically every 1300 mm).

The longline is normally stored in several 'magazines' on board the vessel, each containing 1000-1200 m of ready-hooked longline. A typical magazine might contain 950-1200 hooks. Magazines can be joined in sequence to create the desired length of longline.

Line setting is a relatively straightforward procedure. Typically, one end of the longline is drawn from the hauling room at the stern of the vessel. The other end is attached to a marker flag, radio beacon and buoys that are thrown overboard to designate the outer limit of the longline. Heavy grapnel anchors (40-100 kgs) that have been attached to the line at a point several hundred metres below the buoys cause the longline to rapidly submerge and eventually grab onto the ocean floor. This 'down-line' (the initial length of the longline from the buoys to the anchors) does not contain hooks.

The anchors stabilise one end of the longline. The vessel then steams away from the fixed end of the longline at 2-10 knots, causing the central, hook portion of the longline to be paid out from the stern of the vessel. Each hook passes through an automatic baiting machine (where hooks are baited with about 90% success) before they enter the water.

Autoline vessels deploy negatively buoyant longlines. Weights or floats may be clipped to the longline at various intervals along the line during setting to alter the sink rate of the line. The longline is then gradually set on the ocean floor (often following topographic features as identified from an on board GPS). A second set of grapnels stabilises the proximal end of the longline. Currently Australian vessels are using integrated weight line (9.5 – 11.5 mm diameter) with an internal lead core of 50 grams/m used to sink the line rather than the attachment of external weights.

The bottom-set hooks are then left to attract toothfish for up to 24 hours. The vessel then travels slowly (1-2 knots) towards the distal end of the longline, steadily hauling the longline back onto the stern of the vessel (Smith 1998; Blackwell et al. 2000).

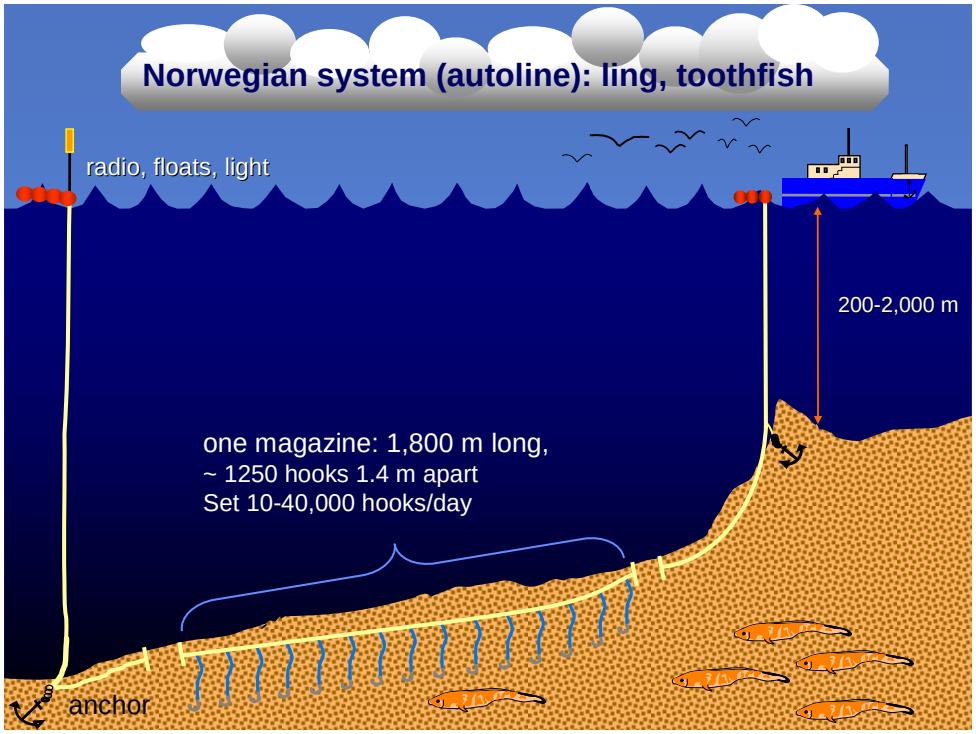


**Figure 6: Indicative longline configuration (Graham Robertson, AAD)**

## 1.6 Fishing area

The Convention area and jurisdiction covers approximately 32.9 million square kilometres (see map at Figure 1) in the area south of 60º South and in the area up to the Antarctic Convergence, which forms part of the Antarctic marine ecosystem. The Antarctic Convergence is a significant feature where colder polar waters meet more temperate waters to the north and forms an effective biological barrier to most Southern Ocean species.

## 1.7 Allocation between sectors

There is no allocation between sectors in New and Exploratory fisheries. The fisheries are competitive TACs which allow for a number of vessels from CCAMLR member countries to fish the TAC set for the particular CCAMLR statistical area. Should a catch limit for a target or bycatch species be reached the fishery is closed. The CCAMLR Secretariat monitors the catch taken by various vessels against the TAC and is responsible for closing the Fishery once the TAC is approached.

## 1.8 Governing legislation/fishing authority

The HIMI Fishery is managed by AFMA under the *Fisheries Management Act 1991*, with the *Antarctic Marine Living Resources Conservation Act 1981* implementing Australia's international obligations under CCAMLR. AFMA and AAD respectively are charged with administration of these Acts. The *Fisheries Management Act 1991* takes precedence over the *Antarctic Marine Living Resources Conservation Act 1981*, in situations where both Acts apply.

## 1.9 Status of export approval/accreditation under the *Environment Protection and Biodiversity Act 1999*.

CCAMLR New and Exploratory fisheries were declared an approved Wildlife Trade Operation under the *Environment Protection and Biodiversity Conservation Act 1999* on 28 November 2005, for a period of three years. A copy of the letter to AFMA, including the conditions and recommendations can be found at:
http://www.environment.gov.au/coasts/fisheries/commonwealth/

# 2 Management

## 2.1 Changes to management arrangements (if applicable)

Since the initial accreditation there have been progressive changes to the applicable CCAMLR Conservation Measures. The Conservation Measures are considered annually and the changes made apply to the season commencing on 1 December which follows the annual meetings of CCAMLR in October and November. Copies of the relevant Conservation Measures for the 2007/08 season are provided in Attachment 1.

The requirements of the Conservation Measures are reflected in the Fishing Permit conditions which are issued by AFMA to Australian vessels which have been approved by CCAMLR to operate in New and Exploratory fisheries.

## 2.2 A statement of the performance of the fishery against objectives, performance indicators and performance measures

There is no Management Plan for CCAMLR New and Exploratory fisheries. Compliance with the Conservation Measures is assessed each year at the CCAMLR meetings, and modified as necessary. The management arrangements adopted for New and Exploratory fisheries are outlined in section 1.4.

## 2.3 Compliance risks present in the fishery and actions taken to reduce these risks

### *Domestic vessels*

There are a range of measures to monitor and ensure compliance with management arrangements and Permit conditions by operators. This regime has provided AFMA with a high level of confidence that operators are compliant with management arrangements. The measures in place to monitor and ensure compliance with management arrangements include:

- a requirement to prior report when entering and exiting from the Fishery. This notifies AFMA of when the vessel intends to enter and exit the area of the fisheries, and therefore when fishing activity in the region is anticipated.
- the requirement to carry an Integrated Computerised Vessel Monitoring System (ICVMS), which enables monitoring of the movement of vessels within the Fishery. Information collected through the ICVMS includes the vessel's location and course.
- the presence of two observers on board all voyages, which allows for monitoring and recording of all catch by an independent person. Observers are also able to monitor an operator's compliance with management arrangements, in particular input controls and environmental management measures. A high level of compliance has been reported to date.
- a formal process through which observers may raise any compliance related issues with the Master of the Vessel to ensure operators are aware of and comply with management measures
- at port monitoring of all catch unloads by an AFMA authorised officer. This further verifies catch records maintained by the observer, reported by the vessel's Master and ensures compliance with CCAMLR Conservation Measures.
- requirement to complete the toothfish CDS paperwork for unloading and export of all toothfish product
- completion of operation by operation daily logbooks and provision of that data to AFMA and AAD.

### *IUU vessels*

Illegal, unreported and unregulated (IUU) fishing continues to be a significant issue for CCAMLR in managing toothfish stocks. Table 1 shows the estimates by CCAMLR of IUU fishing in recent years.

Illegal fishing is that conducted by national or foreign vessels without the permission of the nationals of that State. Fishing which has not been reported or has been misreported is known as unreported fishing, and unregulated fishing is that which is not consistent with, or which contravenes, conservation and management measures (FAO, 2001). Preventing and deterring IUU fishing is an ongoing issue for CCAMLR and there is a continued process of improving estimates of IUU catches.

**Table 1: Estimated annual catch by IUU vessels in New and Exploratory fisheries**

| Fishing Season (1 December to 30 November) | Estimated IUU catch (tonnes) |
|---|---|
| 2001/2002 | 10,898 |
| 2002/2003 | 10,070 |
| 2003/2004 | 2,622 |
| 2004/2005 | 2,076 |
| 2005/2006 | 3,080 |
| 2006/2007 | 3,615 |

A number of measures have been adopted by CCAMLR to combat IUU fishing. The measures include a centralised vessel monitoring system, IUU fishing vessel 'blacklist' and a catch documentation scheme (CDS) for toothfish.

In May 2000, CCAMLR introduced the CDS as another tool towards combating IUU fishing for toothfish. The CDS allows for the tracking of landings and trade flows of toothfish caught in the Convention area, through identification of the origin of Patagonian toothfish entering the markets of all Parties to the Scheme.

The CDS also assists in determining whether toothfish taken in the Convention area was caught in a manner consistent with Conservation Measures. Although CCAMLR recognises that the CDS has not eliminated IUU fishing, it is considered to have been a success to date in reducing IUU fishing, and industry has reported that supplies of IUU fish are considerably reduced. Many buyers now refuse to deal in toothfish unless the CDS paperwork accompanies the product. Industry has further reported that illegal product is receiving a lower return than product accompanied by the Scheme's paperwork.

It has been recognised by CCAMLR, and AFMA, that no single mechanism will eliminate IUU fishing, but rather a suite of approaches and controls needs to be introduced and maintained. In addition to the above requirements, AFMA, in conjunction with Australian government departments, has been actively involved in surveillance and compliance operations of the HIMI region and other CCAMLR waters utilising Australian assets.

In March 2006 the Ministerial led High Seas Task Force (HSTF) on illegal, unreported and unregulated fishing held met in Rome. Ministers from the governments of Australia, Canada, Chile, Namibia, New Zealand and the UK attended the meeting and developed a number of proposals to eliminate or reduce IUU fishing, including in the CCAMLR region.

Other initiatives have been developed in cooperation with the USA and New Zealand, including a campaign for the adoption of a centralised vessel monitoring system (cVMS) for CCAMLR fisheries and capacity-building with countries seeking to implement CCAMLR measures. Australia will continue to work closely with other nations to enhance the current monitoring, control and surveillance (MCS) network and to encourage like-minded countries to participate. Australia was an active participant at the 2nd Global Fisheries Enforcement Workshop, which is part of the International Monitoring, Control and Surveillance (MCS) network, which was held in Norway in August 2008.

Australia is participating in FAO negotiations to establish an international legally binding instrument on port state measures. Australia is seeking rigorous requirements consistent with existing Australian procedures as a measure to combat IUU fishing. Australia also supports the FAO initiative to establish a global record of fishing vessels.

Australia played a leading role in the development and adoption of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) by FAO in 2001. Australia's National Plan of Action to Prevent, Deter and Eliminate IUU Fishing (AUS-NPOA-IUU) was developed in consultation with relevant stakeholders in Australia, which included government and non-government agencies, fishing industry representatives concerned with the conservation and sustainable management of fisheries. The AUS-NPOA-IUU was endorsed in July 2005.

The annual TAC setting process for Patagonian toothfish incorporates estimates of IUU fishing.

## 2.4 Consultation processes

Following CCAMLR approval, AFMA allows access to New and Exploratory fisheries through Fishing Permits. Details are provided in the 'Guide to CCAMLR New and Exploratory Fisheries' which is prepared by AFMA in consultation with AAD. The Guide can be found at www.afma.gov.au.

The procedures for New and Exploratory fisheries are discussed in a range of forums including SARAG, SouthMAC and the CCF. Management of the fisheries is based on a combination of input and output controls. CCAMLR Conservation Measures are a minimum requirement and AFMA has included a number of additional measures on operations in New and Exploratory fisheries. The consultative structure in place for determining all Conservation Measures for the Fishery is detailed at Figure 7 below. SARAG's Research Planning Sub-Group, SARAG, SouthMAC and the AFMA Board are involved in determining all additional management measures.

Those groups marked with an asterisk in Figure 7 draw membership from government organisations, conservation groups, industry and other stakeholders. All other groups comprise of government representation only, with the exception of the SARAG Research Planning Sub-group which includes industry representation.

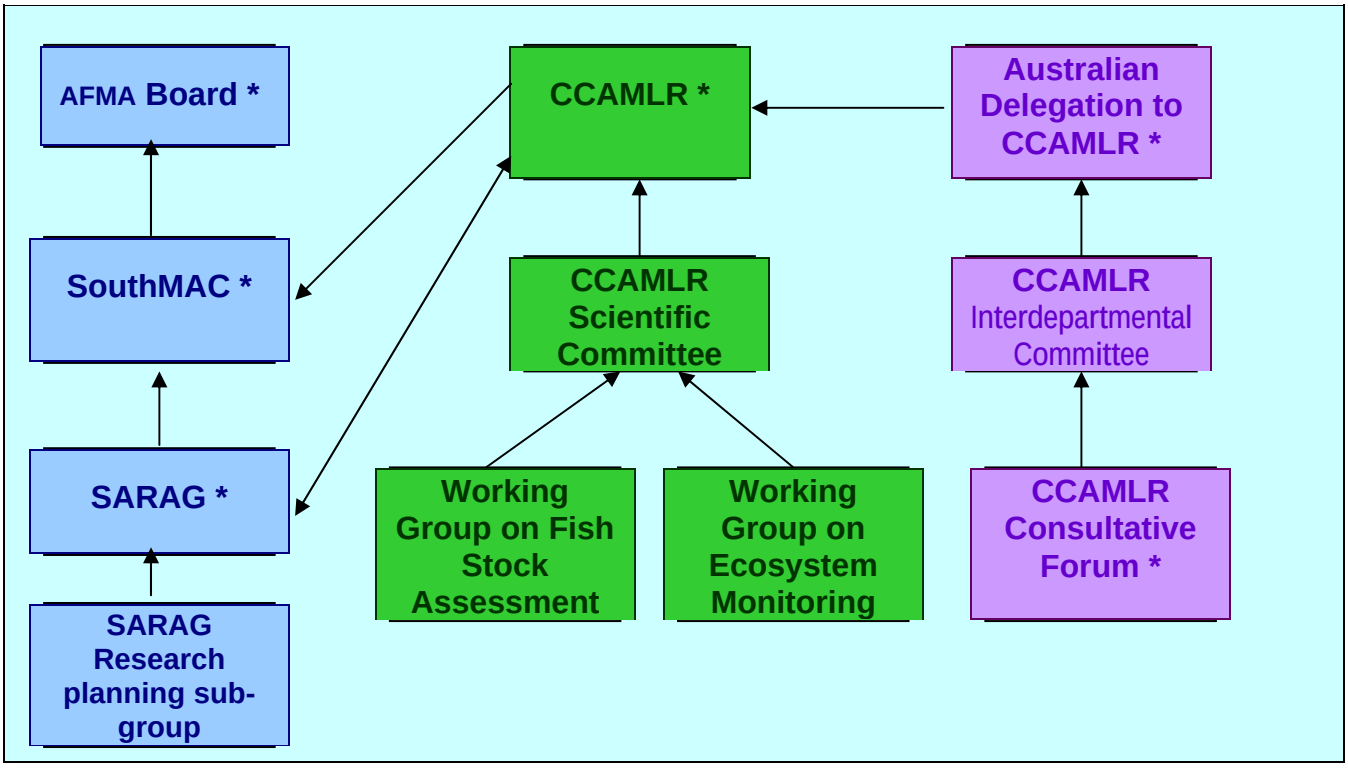


**Figure 7. Key consultative relationships in place for determining Conservation Measures for the Fishery**

SouthMAC is the key advisory committee for the Fishery and includes representation from AFMA, AAD, DEWHA, State Government, a conservation group and industry. SARAG is the key scientific assessment group for the Fishery and includes representation from AFMA, AAD, CSIRO, industry and expertise based scientists.

Both SARAG and SouthMAC meet several times a year, including immediately after CCAMLR to consider any Conservation Measures agreed by CCAMLR. SARAG provides SouthMAC with stock assessment advice as a core part of its functions. SouthMAC recommends to AFMA the catch limits for the Fishery, based on advice from SARAG. AFMA must endorse these catch limits before they can enter into effect.

### 2.5 Demonstration of compliance with TAP's, recovery plans, etc and also relevant domestic and international agreements (where applicable)

The strict environmental measures specified in the CCAMLR Conservation Measures and the AFMA Fishing Permit conditions are among the highest in the world and fisher's adherence to these measures is verified through the carriage of two observers on every trip. The seabird bycatch mitigation measures adopted in the HIMI Fishery are applied to Australian vessels operating in CCAMLR New and Exploratory fisheries.

Data already collected by observers indicates that there has been a high level of compliance with all management measures. Further data, collected through a research and monitoring program, is incorporated into assessments of target and bycatch species, as well as the broader marine environment.

## 3 Research and Monitoring

### 3.1 Results of any research completed relevant to the fishery, including how results will be incorporated into management of the fishery

The research needs for New and Exploratory fisheries are identified in the CCAMLR Conservation Measures each year. For 2007/08, 'Conservation Measure 41-01(2007) – General measures for exploratory fisheries for *Dissostichus* spp. in the Convention area in the 2007/08 season' outlines the requirements. The Conservation Measure includes a data collection plan, a research plan and tagging program. A copy of the Conservation Measure 41-01 (2007) is provided in Attachment 1.

Since commercial fishing commenced in the area, operators have contributed significantly to research and monitoring through the provision of vessel time, cooperation with the observer program, direct financial contributions and expertise of crew. Under the direction of AAD, operators have undertaken an extensive monitoring program, which has formed the basis of the annual stock assessment for the target species. Observers also undertake genetic and biological sampling of target and bycatch species.

During the 2007/08 season the Australian vessel 'Janas' operated in the New and Exploratory fishery in Statistical Division 58.5.3b (BANZARE Bank). The vessel undertook a scientific survey as part of an agreed CCAMLR research program. This was a significant commitment of time and effort by the operator and provided valuable data which will be the basis of stock assessment discussions at future CCAMLR meetings.

As part of its core functions, AAD also uses the data collected to assess bycatch species and the broader marine environment. This information is then presented to AFMA and the Australian delegation to CCAMLR and then CCAMLR who then review these assessments. A number of research papers for the fisheries have been prepared and provided to CCAMLR.

Where possible, information is also obtained from other fisheries within the Convention area, to provide a comparative basis for assessment of stocks and the broader environment within the area of the Fishery.

Additionally, observers further monitor seabird and marine mammal interactions with the fishing vessel.

## 3.2 Description of monitoring programs used to gather information on the fishery

It is requirement for CCAMLR New and Exploratory fisheries to have comprehensive information collection systems in place which is a mix of fishery dependent and fishery independent research. AAD scientists have been integral in developing the scientific components of the data collection system.

### *Fishery dependent monitoring – regular data collection*

The core component of the fishery dependent system is an operation by operation catch and effort logbook. The vessel's master is required to record an estimated weight of each species caught in each fishing operation.

The requirement to carry authorised and accredited observers, including a CCAMLR observer from a country other than Australia, on all cruises to the fisheries further provides a high degree of reliability of the fishery dependent data set.

AFMA's observer program collected information on the landed catch from over 90% of the trawl shots and longline sets undertaken in the fisheries since commercial Australian vessels began fishing in New and Exploratory fisheries in 1996/97. Other nations who also fish in CCAMLR New and Exploratory fisheries are required to collect similar data and provide the data to CCAMLR.

Observers verify the vessel supplied information eg operation by operation catch estimates and conversion ratios from factory operations. The two observers present on each trip by Australian vessels maintain independent records that are used to verify the vessel supplied information. Fisheries scientists from AAD have worked closely with the observers, masters and crew to ensure that this data set is an accurate reflection of fishing activity. The operators in New and Exploratory fisheries have held debriefs after every trip and the discussions in these forums have led to improvements in both vessel and observer record keeping practices.

AAD scientists have also provided specialised equipment and assisted in the training of observers. An example is the computerised fish measuring system supplied and maintained by AAD, which assists observers to produce high quality data within the confines of a commercial fishing vessel.

Fishery dependant data integrates observer catch and effort records and biological data on the target and bycatch species. This data is processed and error checked by AAD scientists after every cruise, who then cross-reference observer data with vessel's logbook data, vessel's daily factory records and unloading documentation. AFMA and AAD are confident that this information is very reliable.

The breadth of data collected on target and bycatch species in logbooks and by observers exceeds CCAMLR standards. Observers also collect extensive biological samples from target and bycatch species so scientists can better understand the biology of these species in the CCAMLR region. The collection of otoliths for example is essential in the development of length-at-age keys needed to convert length frequency data into age density information needed for stock assessment purposes.

Table 2 summarises the fishery dependent information collection system in New and Exploratory fisheries.

**Table 2. Fishery dependent information collection systems in place for CCAMLR New and Exploratory fisheries**

| Description | Information collected | Required by | Collection frequency | Provided to |
|---|---|---|---|---|
| CCAMLR Data Forms 2008 | 1. Fishing gear description<br>2. Shot by shot information on:<br>- fishing effort; and<br>- catch estimates of target and bycatch species | AFMA | 1. Every cruise<br>2. Every fishing operation (trawl shot or longline set) | AAD and<br>CCAMLR<br>For stock assessment purposes and bycatch monitoring |
| CCAMLR Data Forms 2008 | 10 day reports catch and effort by fine scale area | CCAMLR<br>(as conditions on Fishing Permits) | Every 10 day period | CCAMLR for real time monitoring of catches against TACs |
| Integrated Computerised Vessel Monitoring System (ICVMS) | Vessel position,<br>Prior reporting requirements | AFMA<br>(as conditions on Fishing Permits) | Continuous<br>Notification of entry and exit from:<br>- the Fishery; and<br>- port | Not released – data is used for AFMA compliance purposes |
| At sea independent monitoring provided by AFMA authorised and accredited observers<br>Periodic cruises by international scientific observers | Shot by shot monitoring of:<br>Catch and effort information<br>Biological data on target species including:<br>- sexed length/weight frequencies,<br>- otoliths and other biological samples<br>Bycatch<br>Interactions with marine mammals and seabirds<br>Data to confirm conversion ratios of processed fish | AFMA under Fishing Permit conditions<br>- exceeds standards in place under the CCAMLR Scheme of International Scientific Observation | Every cruise<br>The objective of the program is 70% observer coverage of trawl shots in the Fishery | Data to CCAMLR standard provided to CCAMLR one month after each trip<br>Detailed data and samples provide to AAD for stock assessment purposes<br>Bycatch monitoring<br>Impacts on seabirds and marine mammal populations<br>Information on ecological impacts provided to AAD and others<br>Conversion ratios used by AFMA for quota management purposes |
| Landed catch monitoring<br>1. Toothfish Catch Documentation Scheme (CDS)<br>2. Unload monitoring | 1. Verified landed weight and product destination of all toothfish products<br>2. Weight and grade of landed catch of all other species | 1. AFMA and CCAMLR<br>2. AFMA and CCAMLR | 1. Every cruise<br>2. Every cruise | 1. *Dissostichus* catch documents provided to CCAMLR to monitor toothfish take by CCAMLR members<br>2. Monitoring of catch and retained bycatch by AFMA |

* AFMA implements all relevant all CCAMLR requirements, and in many instance exceed them.

### *Fishery independent monitoring – one off data collection*

AFMA has a high level of confidence in the fishery independent information that has been collected. This independent data strongly supports the fishery dependant data. Specific research operations are an important source of information. The research requirements for New and Exploratory fisheries are outlined in CCAMLR Conservation Measure 41-01 (2007) – General measures for exploratory fisheries for *Dissostichus* spp. in the Convention Area in the 2007/08 season, which is provided at Attachment 1.

The focus with New and Exploratory fisheries is often to get baseline information, as much of the time fishing operations are occurring for the first time in an area. There is often insufficient data on which to undertake a stock assessment. While the data is being collected precautionary TACs are set by CCAMLR.

Data to support these estimates has been collected from commercial vessels which are currently required to undertake research sets, as prescribed by CCAMLR. Australian commercial vessels have been participating in this work since 1997.

Scientists from AAD in association with AFMA, provide training and manuals to observers to enable them to manage scientific elements of surveys and tagging programs. These scientists also brief the master and crew to ensure they understand their roles in the research program. This is particularly important when survey programs have high scientific data requirements.

AFMA will ensure that the requirements specified by CCAMLR for information collection in New and Exploratory fisheries will continue to be reflected in Fishing Permit conditions.

## 3.3 Results of any collaborative research undertaken for the fishery

The results of research are incorporated in the annual stock considerations, which are submitted to CCAMLR and peer reviewed by WG-FSA and the Scientific Committee when assessing New and Exploratory fisheries.

# 4 Catch data

## 4.1 Total catch of target species (including retained and discarded catch)

The total seasonal catch of target and bycatch species, by Statistical Division and fishing method, is published annually in the CCAMLR Statistical Bulletin which can be accessed via the CCAMLR website at www.ccamlr.org

## 4.2 Total catch of target species taken in other fisheries

Australia with the HIMI Fishery (Statistical Division 58.5.2) and France with Kerguelen Island (Statistical Division 58.5.1) and Crozet Islands (Statistical Division 58.6) have territories where they regulate their own fleets targeting Patagonian toothfish. Table 3 summarises the recent toothfish catches taken from those areas.

| Season | Patagonian toothfish catch (tonnes) | | |
|---|---|---|---|
| | HIMI Fishery | Kerguelen Fishery | Crozet Fishery |
| 2002/03 | 2844 | 5291 | 570 |
| 2003/04 | 2864 | 5171 | 608 |
| 2004/05 | 2744 | 5073 | 638 |
| 2005/06 | 2497 | 5156 | 802 |
| 2006/07 | 2387 | 5201 | 436 |

**Table 3: Toothfish catches additional to catch taken in New and Exploratory fisheries (Source: CCAMLR Statistical Bulletin)**

## 4.3 Catch of by-product species

The term by-product is not used in the Fishery, with reference just made to target species (toothfish) and by-catch species.

## 4.4 Total catch of bycatch species

Historically, the bycatch limits have not been approached. For example, in 2004/05 when the toothfish TAC was taken for 58.4.3b, 4% of the macrourids catch limit and 5% of the skates and rays limit were taken. If a limit is reached the fishery would be closed down, even if the TAC for the target species had not been taken. The total seasonal catch of bycatch species, by Statistical Division and fishing method, is published annually in the CCAMLR Statistical Bulletin which can be accessed via the CCAMLR website at www.ccamlr.org

The catch limits will be incorporated as conditions on Fishing Permits. AFMA's Monitoring Section keeps a record of the catch levels of each species taken within the fisheries. The data received is considered to be highly reliable as information from observers is used to supplement catch-landing documentation.

The catch limits for bycatch species for the 2007/08 season are shown in CCAMLR Conservation Measure 33-03(2007) which is provided in Attachment 1.

## 4.5 Harvest by each sector (ie commercial, recreational, indigenous and illegal)

As a consequence of its remote location the HIMI Fishery is a purely commercial Fishery with no recreation or indigenous sectors. The estimated IUU catch is provided in Section 2.3.

## 4.6 Effort data including information on any trends

The total seasonal catch and effort, by Statistical Division and fishing method, is published annually in the CCAMLR Statistical Bulletin which can be accessed via the CCAMLR website at www.ccamlr.org

## 4.7 Spatial issues/trends

For confidentiality reasons the spatial trends cannot be disclosed in detail. The fine scale data is made available to CCAMLR scientists when considering the status of toothfish stocks in CCAMLR New and Exploratory fisheries.

# 5 Status of target stock

## 5.1 Resource concerns

Stock assessment models are not applied to New and Exploratory fisheries as by their nature data is limited. The focus is on gaining information which can be used in stock assessments should activity continue in a New and Exploratory fishery. Precautionary catch limits are set based on information gained from exploited fisheries in the CCAMLR region. The following information is extracted from the CCAMLR website.

CCAMLR's approach to the conservation of Antarctic marine living resources is defined by Article II of the Convention. From the principles outlined in Article II, two central concepts have evolved to guide CCAMLR in carrying out its management responsibilities, namely:

1. Management strives to follow a 'precautionary' approach. This means that CCAMLR collects the data it can, then weighs up the extent and effect of the uncertainties and gaps in such data before making a management decision. The approach aims to minimise the risk of long-term adverse effects rather than delaying decisions until all necessary data are available.

2. Management also follows an 'ecosystem' approach. Ideally, this takes into account all the delicate and complex relationships between organisms (of all sizes) and physical processes (such as currents and sea temperature) that constitute the Antarctic marine ecosystem.

CCAMLR's ecosystem approach therefore not only focuses on regulating fishing for certain species, it also aims to ensure that fishing does not impact adversely on other species that are related to, or dependent on, the target species.

For example, while krill harvesting is regulated and monitored directly, CCAMLR also endeavours to monitor the effect which harvesting may exert on species that either eat krill or which are themselves eaten by krill predators. CCAMLR therefore seeks to preserve the 'health' of the ecosystem by setting conservative (i.e. precautionary) krill catch limits to take account of the needs of associated species and to preserve the ecological sustainability of all the species concerned.

CCAMLR's pioneering work on the precautionary and ecosystem approaches has been recognised as setting the benchmark for fisheries management organisations around the world.

CCAMLR has several approaches to regulating exploitation in the Southern Ocean. It collects data to follow as closely as possible the development of exploited stocks and newly developing fisheries. It also develops models to deal specifically with uncertainty in data collection. CCAMLR draws on five main sources to improve data collection:

- fisheries catch and effort statistics;
- biological information and data on by-catches of fish in commercial fisheries;
- seabirds and marine mammals caught during commercial operations and collected by national and international scientific observers;
- biological information collected during scientific and fishery-independent surveys; and
- biological information on krill and dependent species collected as part of the CCAMLR Ecosystem Monitoring Program.

Decision rules have been developed for objective scientific analysis. Decision rules, specifying the set of decisions that are made in setting, removing, or varying management measures, using the results of assessments of the status of a harvested resource, are under development. They have so far been applied to catches in the krill fishery and the fisheries on Patagonian toothfish.

### *Application of the Precautionary Approach – New and Exploratory Fisheries*

The preceding sections have examined two key elements in CCAMLR's approach to management – the ecosystem and precautionary approaches. In accordance with the latter, CCAMLR has recognised that fisheries should be managed from the outset, and has adopted conservation measures that set out requirements for any Member planning to initiate a fishery for any species, or in any area, that has not previously been exploited.

At this 'new fishery' stage, the measures require that Members notify CCAMLR of their intention to start a new fishery and supply information on the nature of the proposed fishery and as much as they can on the biology of target species and the possible effects of the fishery on any dependent and associated species. In such cases, CCAMLR has limited catch or fishing effort (or both), and has also made scientific observation of the fishery obligatory. The conduct of a new fishery is limited to the Member(s) who made the notification(s).

A new fishery is designated an 'exploratory fishery' after its first year. The conservation measure that the Commission has implemented for exploratory fisheries allows for continued regulation of the fishery while the scientific information required for a full assessment of the fishery and stock(s) concerned is being collected. A major component of the exploratory phase is the implementation of a plan to collect the data required for such an assessment.

CCAMLR aims to ensure that an exploratory fishery is not allowed to expand faster than the information to manage the fishery in accordance with the principles of Article II is collected. To ensure information is adequate, the Scientific Committee is required to develop (and update annually as appropriate) a Data Collection Plan. This plan identifies the types of data required and how to obtain them from the exploratory fishery.

Participating Members are required to provide a Research and Fishery Operation Plan for review by the Scientific Committee and Commission, as well as to submit annually the data specified by the Data Collection Plan. The Scientific Committee also sets a precautionary catch limit at a level not substantially above that necessary to obtain the information specified in the Data Collection Plan and to undertake assessments and evaluations.

CCAMLR's discussions about New and Exploratory fisheries have highlighted the need to clarify the decisions and management procedures at the various stages of fishery development. In particular, the focus has been on developing uniform criteria for the resumption of 'lapsed' fisheries (i.e. those that have ceased operating for some period) and 'closed' fisheries (i.e. fisheries closed by a conservation measure). While there is fundamental agreement with the general principle that a notification procedure (as for New and Exploratory fisheries) should be followed for the resumption of closed or lapsed fisheries, the details of how and to what extent additional procedures (e.g. for data collection) should be implemented have yet to be finalised. (CCAMLR website)

#### *Incorporation of IUU take in the setting of catch limits*

IUU removals from a CCAMLR statistical area are estimated and taken into consideration when setting precautionary catch limits. IUU estimates are estimated from several sources including sightings of IUU vessels, surveillance of the area, trade figures from various countries and knowledge of port calls and unloads of known or suspected IUU vessels.

### 5.2 Results of any stock assessments

Stock assessment models are not applied to New and Exploratory fisheries as by their nature data is limited. The focus is on gaining information which can be used in stock assessments should activity continue in a New and Exploratory fishery. Precautionary catch limits are set based on information gained from exploited fisheries in the CCAMLR region.

### 5.3 Results of any stock recovery strategies (if applicable)

Not applicable

## 6 Interactions with protected species

### 6.1 Frequency and nature of interactions

Fishing Permit conditions require operators in New and Exploratory fisheries to report to AFMA, within 24 hours, any interaction that results in injury or death of a protected species. AFMA then notifies the relevant sections of the DEWHA within seven working days of the receipt of these reports. This arrangement is in place to avoid duplication of industry's Government reporting requirements.

Observers are also required to submit an independent report to AFMA and where possible freeze the specimen for later analyses by AAD.

Observers also monitor the deployment and retrieval of the fishing gear in order to quantify any interactions with seabirds and marine mammals. Observers take counts of the seabirds and marine mammals within 300 metres of the vessel during each observation period. All observed interactions with the gear are recorded and codes are assigned codes based on the nature of the interaction, from those of a minor nature to those causing death.

The aim of this monitoring program is to determine the kind and extent of contacts between wildlife fishing vessels and their operations and to monitor trends in time (Wienecke and Robertson, 2000). Because there has been a high level of compliance by operators with management measures, AFMA has a high level of confidence that observer data reflects fishing activity during shots that are not monitored.

Observers produce a report for each fishing cruise that includes:

- a summary of any incidental mortalities or injuries
- a basic summary of the environmental monitoring data.

There have been three seabird interactions (1 with fishing gear and the other two with the vessel) and two marine mammal interactions with Australian vessels since operations began in New and Exploratory fisheries. The interactions were:

| Date | Species | Event |
|---|---|---|
| 12/02/03 | Southern giant petrel | released alive - bird became entangled in tori line |
| 02/03/03 | Antarctic petrel | bird found dead in snow squall |
| 14/03/03 | Antarctic petrel | bird found dead on deck. |
| 05/09/05 | Elephant seal | seal hooked and died in longline operations |
| 07/09/05 | Elephant seal | seal became tangled in longline and died |

Under the Conservation Measures limits are placed on the number of seabirds that can be taken. For example, under Conservation Measure 41-07(2007) which applies to BANZARE Bank (Division 58.4.3b) should a total of three seabirds be caught by a vessel outside the normal season, the vessel shall cease fishing immediately and shall not be permitted to fish outside the normal fishing season for the remainder of the 2007/08 season.

## 6.2 Management action taken to reduce interactions and results of such action

Fishers are required to submit detailed reports of each wildlife interaction within 24 hours of the occurrence. Each report must also include a detailed response to the wildlife interaction which must be implemented immediately by the fisher to minimise the likelihood of similar interactions. The reports are submitted by AFMA to the Protected Species Unit at DEWHA.

Incidence and response reports are reviewed regularly at SARAG meetings. Stakeholders are encouraged to contribute innovation and the application of enhanced technology to minimise any future wildlife interactions.

A range of actions have been taken to minimise the levels of interaction. These include:

- no offal discharge requirement which limits provisioning opportunities for wildlife;
- in longline operations - using integrated weight line, paired streamer lines, brickle curtains and seasonal closures all designed to avoid seabirds attending the baits;
- minimising of lighting on fishing boats to reduce the risk of seabirds colliding with boats; and
- prohibition on the use of plastic packaging bands.

# 7 Impacts of the fishery on the ecosystem in which it operates

## 7.1 Results of any Ecological Risk Assessments

AFMA commissioned CSIRO to conduct an "Ecological risk assessment for Commonwealth fisheries" which included the HIMI Fishery. No Ecological Risk Assessment (ERA) was carried out for New and Exploratory fisheries. One of the objectives of the ERA project was to determine the relative sustainability risks in Commonwealth managed fisheries, considering target, bycatch and broader ecological impacts where possible.

As described in Section 5.1, CCAMLR adopts a ecosystem management approach. The ERA results arising from the HIMI Fishery will provide a guide for assessing species risks in New and Exploratory fisheries.

The Ecological Risk Management and development of appropriate management responses will commence in the HIMI Fishery once the residual risk assessment and rapid level 3 assessments for each sub-fishery are finalised. It is anticipated this will be completed by the end of 2008. Should the project identify risks to bycatch or the environment not already being mitigated, appropriate management responses will be implemented.

## 7.2 Nature of impacts on the ecosystem

The CCAMLR management approach incorporates ecosystem components. Information on predators, prey and the environment are collected simultaneously and submitted to the CCAMLR Working Group on Ecosystem Monitoring and Management for the preparation of advice to the Scientific Committee. This information is then incorporated into the management arrangements for each Statistical Division.

The information collected in the Fishery is extremely accurate in terms of the:

- recording of the spatial and temporal distribution of fishing effort
- quantifying of the total catch composition
- quantifying environmental interactions, including those with seabirds and marine mammals.

Catches of benthic organisms (particularly from trawl operations) and substrate are quantified by independent observers and recorded methodically. Samples of these organisms along with other bycatch are retained and forwarded to the AAD and CSIRO or appropriate museums for identification. The vessel logbooks and observer database also record the actual time and depth at which the vessel's fishing gear was in contact with the substrate, or in the case of mid-water shots the time the gear approaches the aggregations being targeted.

Observers also collect stomach samples from toothfish and some bycatch species, which assists in the understanding of trophic linkages in the CCAMLR region. This work is also undertaken in the HIMI Fishery.

Observers and crews of licensed fishing vessels also collect information on IUU fishing vessels operating in the region through direct observations and indirectly through the recovery of longline fishing gear discarded or lost by these vessels. Observers also report on compliance by Australian vessels with MARPOL and additional waste management requirements.

Relevant information from other CCAMLR fisheries that can be used in the assessment of the HIMI Fishery is also gathered where appropriate. In addition, information from the Macquarie Island Toothfish Fishery is used as well as onshore studies into dietary habits of marine mammals and seabirds that occur on Heard Island, McDonald Islands, or other similar sub-Antarctic islands.

The Fisheries Research and Development Corporation has approved a four year project (commenced 1 July 2006) to investigate 'Demersal fishing interactions with marine benthos in the Australian EEZ of the Southern Ocean: an assessment of the vulnerability of benthic habitats to damage by demersal gears'. The development of underwater camera technology which can be attached to the fishing gear (trawl, longline and pot) is a key aim of the project.

### 7.3 Management action taken to reduce impacts and results of such action

The management of the Fishery is based on CCAMLR's ecosystem management principles with additional controls imposed by AFMA. The following management actions are in place to minimise impacts to ecosystems:

- a nil offal discharge policy, to avoid the effects that provisioning could have on wild animals and to avoid the attraction of animals to the boats;
- contingency arrangements for disposal of fish meal should the fish meal plant breakdown;
- restrictions on plastic packaging bands, avoiding any possible impact these bands may have on wild animals;
- a requirement that all plastic is burned and that plastic residue must not be discarded at sea to avoid wild animals having any interactions with plastic from the Fishery;
- a restriction on the discharge of poultry products or brassicas to avoid the introduction of avian diseases and non-native plants;
- operators are required to make attempts to retrieve any lost gear;
- operators also frequently recover illegal fishing gear from the region of the Fishery, which may include gear that has drifted into the Fishery; and
- ongoing assessment of benthic impacts.

## 8 Progress in implementing recommendations and conditions resulting from the DEW's assessment of the fishery

### 8.1 Description of progress in implementing each recommendation and condition

The table at Attachment 2 outlines the progress made against the recommendations and conditions of the assessment as at 30 June 2008.

## 9 References

Blackwell, R.G., Bull, B., Hanchet, S.M. and Smith, N.W. 2000. Factors affecting the sink rate of autoline longline fishing gear. CCAMLR WG-FSA 00/58.

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Wienecke.B. and Robertson, G., 2000, Seabird and seal- fisheries interactions in the Australian Patagonian toothfish *Dissostichus eliginoides* trawl fishery, Fisheries Research 1-13.

Cover photo – 'Eldfisk' under ice conditions - Dave Williams

# 10 List of acronyms

| | | |
|---|---|---|
| AAD | - | Australian Antarctic Division |
| AFMA | - | Australian Fisheries Management Authority |
| CCAMLR | - | Commission for the Conservation of Antarctic Marine Living Resources |
| CCF | - | CCAMLR Consultative Forum |
| CDS | - | Catch Documentation Scheme |
| CPUE | - | catch per unit effort |
| Convention | - | Convention on the Conservation of Antarctic Marine Living Resources |
| CSIRO | - | Commonwealth Scientific and Industrial Research Organisation |
| DEWHA | | Department of the Environment, Water, Heritage and the Arts |
| EPBC Act | - | *Environment Protection and Biodiversity Conservation Act 1999* |
| EEZ | - | Exclusive Economic Zone |
| ERA | - | Ecological Risk Assessment |
| HIMI | - | Heard Island and McDonald Islands |
| HSTF | - | High Seas Task Force |
| ICVMS | - | Integrated Computerised Vessel Monitoring System |
| IUU | - | Illegal, unreported and unregulated |
| MCS | - | Monitoring, Control and Surveillance |
| SARAG | - | Sub-Antarctic Resource Assessment Group |
| SouthMAC | - | Sub-Antarctic Fisheries Management Advisory Committee |
| TAC | - | total allowable catch |
| WG-EMM | - | Working Group on Ecosystem, Monitoring and Management |
| WG-FSA | - | Working Group on Fish Stock Assessment |
| WTO | - | Wildlife Trade Operation |

**Attachment 2**

***Recommendations to the Australian Fisheries Management Authority (AFMA) on the ecologically sustainable management in relation to CCAMLR New and Exploratory fisheries***

***Wildlife Trade Operation – 28 November 2005 to 28 November 2008***

| Performance Criteria | Level of Achievement as at 30 June 2008 | Deadline |
|---|---|---|
| 1. AFMA to advise the Department of the Environment and Heritage (DEH) of any material change to the NEF-CCAMLR management arrangements that could affect the criteria on which the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) decisions are based, within 3 months of that change being made. | The management arrangements outlined in the assessment report for CCAMLR New and Exploratory fisheries are being applied to the Fishery. There have been no material changes to the arrangements since the Fishery was strategically assessed. | Ongoing |
| 2. AFMA to identify and implement management responses to fishing impacts identified from the Ecological Risk Assessment (ERA) process for the Heard Island and McDonald Islands Fishery (HIMIF) that apply to the New and Exploratory Fisheries in the CCAMLR Region, with the timeframe for implementation commensurate with the level of risk identified by the ERA or other relevant research on target, byproduct, bycatch or protected species interactions. | Yes<br>An Ecological Risk Assessment workshop was held in September 2007, and focussed on the draft residual risk assessment prepared by AFMA.<br>The ERA process for Antarctic fisheries is continuing with ongoing discussions about the residual risk assessment. A level 3 rapid risk assessment will be undertaken in 2008. It is expected the ERAs will be completed by the end of 2008, following a further SARAG input.<br>AFMA, as required under the Antarctic Fisheries Bycatch Action Plan 2003, continues to regularly monitor review the bycatch levels and to implement appropriate mitigation measures. | Ongoing |
| 3. AFMA to monitor interactions with protected species, in particular seabirds, to ensure that risk of interactions does not increase due to changes in the levels of effort, fishing capacity or methods such as additional boats entering the fishery or the variation of gear. In the event that risk levels increase or cumulative effects are detected AFMA should develop and implement further mitigation measures as a matter of highest priority. In the event of an interaction occurring with a threatened species then additional mitigation measures should be immediately adopted to prevent further interactions. | Yes<br>The range of mitigation measures adopted for the Heard Island and McDonald Islands (HIMI) Fishery are applied to Australian boats operating in New and Exploratory fisheries. These are outlined in the Antarctic Fisheries Bycatch Action Plan.<br>Annually CCAMLR develops Conservation Measures which apply to each New and Exploratory fishery. AFMA includes these and some more stringent measures as conditions on Fishing Permits to regulate fishing operations. For example, there is a no offal discharge requirement for all Australian vessels, and for longline vessels there is a requirement to deploy twin bird scaring lines. | Ongoing |

| Performance Criteria | Level of Achievement as at 30 June 2008 | Deadline |
|---|---|---|
| 4. AFMA to continue to pursue best practice in the mitigation of interactions with protected species by monitoring the effectiveness of mitigation measures, in all sectors, and implement where relevant, any new mitigation measures in the NEF-CCAMLR that may be developed in other fisheries. | The range of mitigation measures adopted for the Heard Island and McDonald Islands (HIMI) Fishery are applied to Australian boats operating in New and Exploratory fisheries. These are outlined in the Antarctic Fisheries Bycatch Action Plan.<br>No seabirds deaths have been observed as a result of interactions with fishing gear on Australian vessels since operations in New and Exploratory fisheries started. Activity has been intermittent since the late 1990s. Two observers are present on each voyage.<br>There have been some interactions with marine mammals in exploratory fisheries. AFMA through their observer program continue to monitor seal interactions with fishing vessels. There is currently no conclusive evidence supporting that seals are beginning to habituate to vessels. In May 2003 the Sub-Antarctic Fur Seal and Southern Elephant Seal Recovery Team concluded that fishing was not having a significant effect on the recovery of these species.<br>The number of seal interactions with fishing vessels has been: 2004/05 season – 2 elephant seal deaths at Elan Bank (CCAMLR Statistical Division 58.4.3a). | Ongoing |
| 5. Within 2 years, AFMA in coordination with the Australian Antarctic Division (AAD) to review the CCAMLR research plan and suggest improvements in data collection and research on Antarctic toothfish as the basis for future stock assessments and management arrangements. | In November 2006 CCAMLR agreed to increase the toothfish tagging rate for vessels operating in New and Exploratory fisheries to 3 toothfish per tonne. This requirement is aimed at improving the stock assessments for each CCAMLR statistical division. | Ongoing |
| 6. The Department of Agriculture Fisheries and Forestry (DAFF), in coordination with AFMA and AAD, and other relevant government agencies, to continue to take a proactive role in CCAMLR and other relevant forums to pursue the development and implementation of cross jurisdictional measures to improve controls over illegal, unregulated and unreported fishing | DAFF to provide a written response separately. | Ongoing |

**Summary** – During the 2007/08 season the Australian vessel ‘Janas’ operated in the New and Exploratory fishery in Statistical Division 58.5.3b (BANZARE Bank). The vessel undertook a scientific survey as part of an agreed CCAMLR research program.

The total allowable catches (TACs) are set on a competitive basis, which means than vessels from other CCAMLR Member nations can also fish the TAC. In recent seasons the competitive TAC has been taken prior to the time the Australian operator planned to begin operations.

Australia continues to play an active role in the management of New and Exploratory fisheries and in the review and development of specific Conservation Measures.