CCAMLR MPA

Edited June 2017

Antarctic krill (*Euphausia superba*) makes up an estimated biomass of around 379Million tons[1], more than that of the global population of humans. Of this, over half is eaten by whales, seals, penguins, squid and fish each year, and it is replaced through reproduction and subsequent growth of the krill population. Krill can live in the wild 4 to 7 years, spawning when they are 2 to 3 years old.

Krill is important in the food chain because it feeds on phytoplankton, and to a lesser extent zooplankton, making nutrients available to other animals for which krill make up the largest part of their diet. For this reason krill are considered a keystone species in the Southern Ocean ecosystem. Consequently, fishing regulations that prevents overfishing, by default impacting other Antarctic living organisms, is and should be the cornerstone of CCAMLR[2] and for all those involved in this activity.

Antarctica is home to one third of the world's Adélie penguins, one quarter of all emperor penguins, one third of all Antarctic petrels, and over half of all South Pacific Weddell seals[3].

It is therefore good news that CCAMLR acts proactively instead of letting others guide the "conservation *conversation*", some not necessarily involved in the Antarctic fishery.

It must be remembered that CCAMLR was established in 1980 amid concerns that an expanding krill fishery could have a large impact on the ecosystem of the Southern Ocean. Since then krill harvesting has been managed in a very precautionary manner, in recognition of the critical role of krill in the Antarctic ecosystem, and uncertainties associated with environmental changes, including in respect of climate change.

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[1] A. Atkinson, V. Siegel, E.A. Pakhomov, M.J. Jessopp & V. Loeb (2009). "A re-appraisal of the total biomass and annual production of Antarctic krill". *Deep-Sea Research I* **56**: 727–740.

[2] CCAMLR includes; Argentina, Australia, Belgium, Brazil, Chile, China, France, Germany, India, Italy, Japan, the Republic of Korea, Namibia, New Zealand, Norway, Poland, Russian Federation, South Africa, Spain, Sweden, Ukraine, United Kingdom, USA, and Uruguay, and the European Union

[3] Chris Johnson, WWF Australia Ocean Science Manager

CCAMLR has seriously undertaken science as the most robust tool to define catch limits (TAC), marine protected areas (MPA) and a regular survey of the matrix krill's environment, associated species, fishing effort and biomass health. And fishing regulations are taken on full consensus.

As the latest fishing regulation raises fishing restrictions (November 2016), it talks well of fishing operators and the entire krill community as a whole.

The size of the krill population is very variable from year to year. Changes observed are driven mostly, among other things, by normal biological patterns and the variability in the amount of sea-ice, which is why there is a concern about the effects of climate change (although there is no actual evidence of any reduction in sea-ice around the whole of the Antarctic). Fishing efforts also takes a toll on the biomass.

Regarding the allowable catch limits, sustainability of the krill fishery is assured by setting limits on the fishery such that the catches should leave enough krill to ensure that there is a healthy breeding population and also that there is enough for predators. CCAMLR's approach to managing the krill fishery is to minimize the impact on the ecosystem rather than trying to maximize the size of the fishery.

The total allowable catch for the southwest Atlantic is currently about 5.6 million tons annually. However, CCAMLR has decided that the catch will be regulated within a 620 000 ton "*trigger*" level which is distributed across four regions in the southwest Atlantic. It is within this area where CCAMLR new regulations will take place.

This "*trigger*" level represents approximately 1% of the estimated 60 million tons of the unexploited biomass of the krill population in this region. The actual annual catch is around 0.3% of the unexploited biomass of krill.

All this is very good news for the environment and NGO's so concerned on this region. But there are some additional readings;

a) Imposing restrictions also limit insurgents' entrance, directly benefiting incumbents. This will certainly impacting insurgents' business plans. And this is a driver Russia and China have followed, and in a slightly different way for Norwegians too.
b) This restriction will help incumbents to be seen as raising the bar on fishing protection, proactively helping environment care.

c) NGO's will not stop here. They will keep hammering for more restrictions. Isn't NGO's livelihood dependent on manufacturers activities, no matter if these are carefully done?
d) The political arena will not go away. Antarctic region has forbidden commercial activities, but this will have to be reinstated in the not so far future. Everyone wants to be on the front seats when the door opens for some commercial music.
e) Although well covered by the media, and operators and CCAMLR drafting a good regulation, most of the protected Ross Sea does not have much krill fishery, if any at all. This is FAO area 88 while most of the Antarctic krill fishery takes place in FAO area 48.

The new regulation took around five years of negotiations to establish a marine protected area (MPA) in the Antarctic Ross Sea Region[4], settled at this year (October) CCAMLR annual meeting in Hobart, Australia, where member countries agreed to protect 1,550,000 km^2 (600,000 square miles) of the Ross Sea, covering more than 12 percent of the Southern Ocean, entering into force by December 2017 (season 2017/2018) by establishing:

- 1,117,000 km^2 of fully protected marine reserve;
- 110,000 km^2 special research zone allowing for limited research fishing for krill and toothfish, and;
- 322,000 km^2 krill research zone allowing for controlled research fishing for krill.

Seventy-two percent of the MPA will be a "*no-take*" zone. Areas designated as research zones that will allow for some fishing for krill and sawfish. Seventy-two percent of the MPA will be a "*no-take"* zone, which forbids all fishing, while other sections will permit some harvesting of fish and krill for scientific research.

The Ross Sea is seen as one of the world's most ecologically important oceans. The Ross Sea MPA follows CCAMLR's establishment, in 2009, of the world's first high-seas MPA, the South Orkney Islands southern shelf MPA, a region covering 94 000 km^2 in the south Atlantic.

Although the Ross Sea has almost no Antarctic krill fishing, any mention of fishing restriction raises more than one eyebrow.

[4] This was a joint USA/New Zealand proposal.

Russia agreed to the proposal after blocking conservation proposals on five previous occasions. Russian fishing companies were looking ways to prevent any type of fishing restriction beyond existing MPAs. Although Russia (when was par of the USSR) does not have any factory trawler fishing krill at present, it has not forgotten its past massive fishing efforts in the 80s, and at a lower extent ends 90s/early 2000s.

In Tharos opinion, it is the former Soviet Union, and Russia, the ones that hold the title of being the original founders of this fishery. Japan might also be added to this club. All others are "*newcomers*".

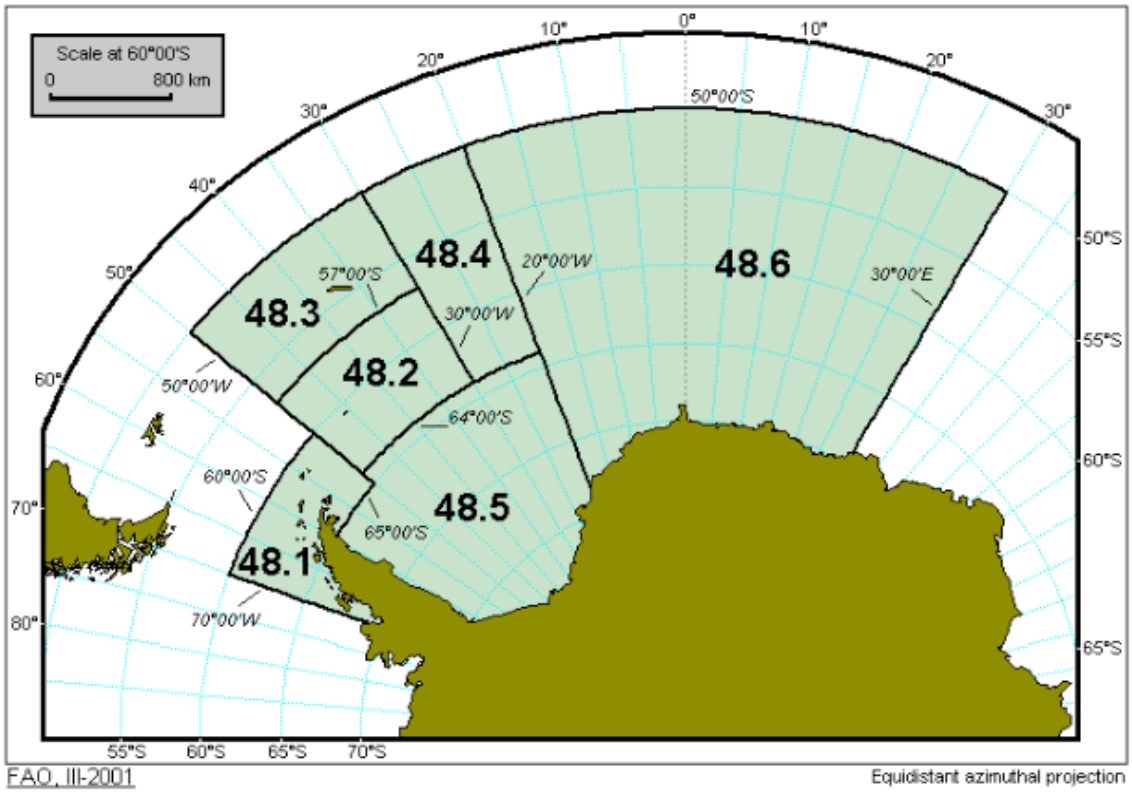
China, alongside Russia, was also preventing this deal to be agreed earlier. Large Chinese Government subsidies granted to its krill fishing operations cannot afford any type of long-term fishing restrictions, no matter if these are on the main fishing area or not. China has, beyond commercial interests, a political decision to have a significant presence in this part of the world, or seas must be said. China sees this area in a "*decades scenario*". In parallel to subsidized Antarctic fishing operations, China is also building on-land facilities in the Antarctic region to conduct, what is says, is "*research and investigation work*".

Nonetheless, all players have diverse economic and political interests. To get them all to align was quite a challenge.

In perspective, the Ross Sea will not impact significantly what happens today in other parts of the Antarctic Seas krill fishery. Almost the entire krill fishery takes place in area FAO 48, tip of the Antarctica Peninsula, Weddell and Bellinghausen seas, South Orkney and South Georgias.

Ross Sea as part of the Southern Ocean.

Statistically,



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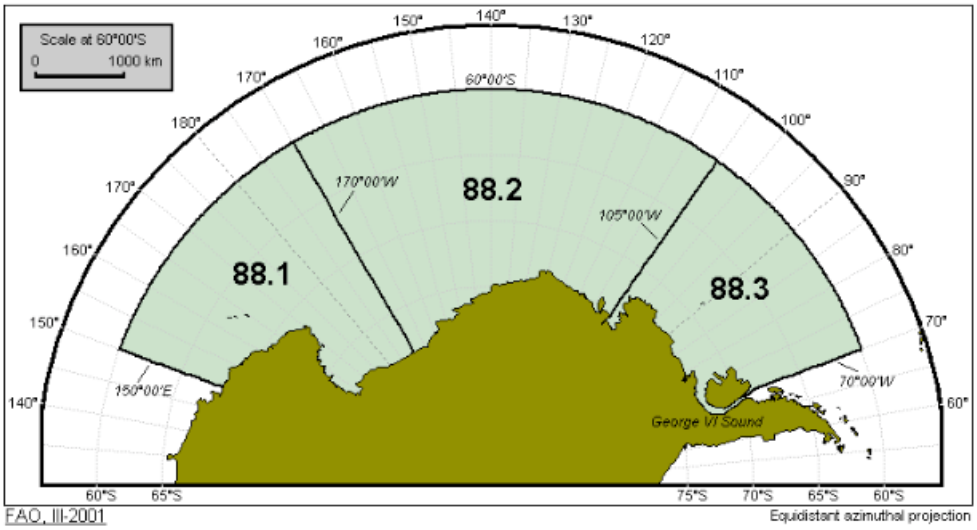
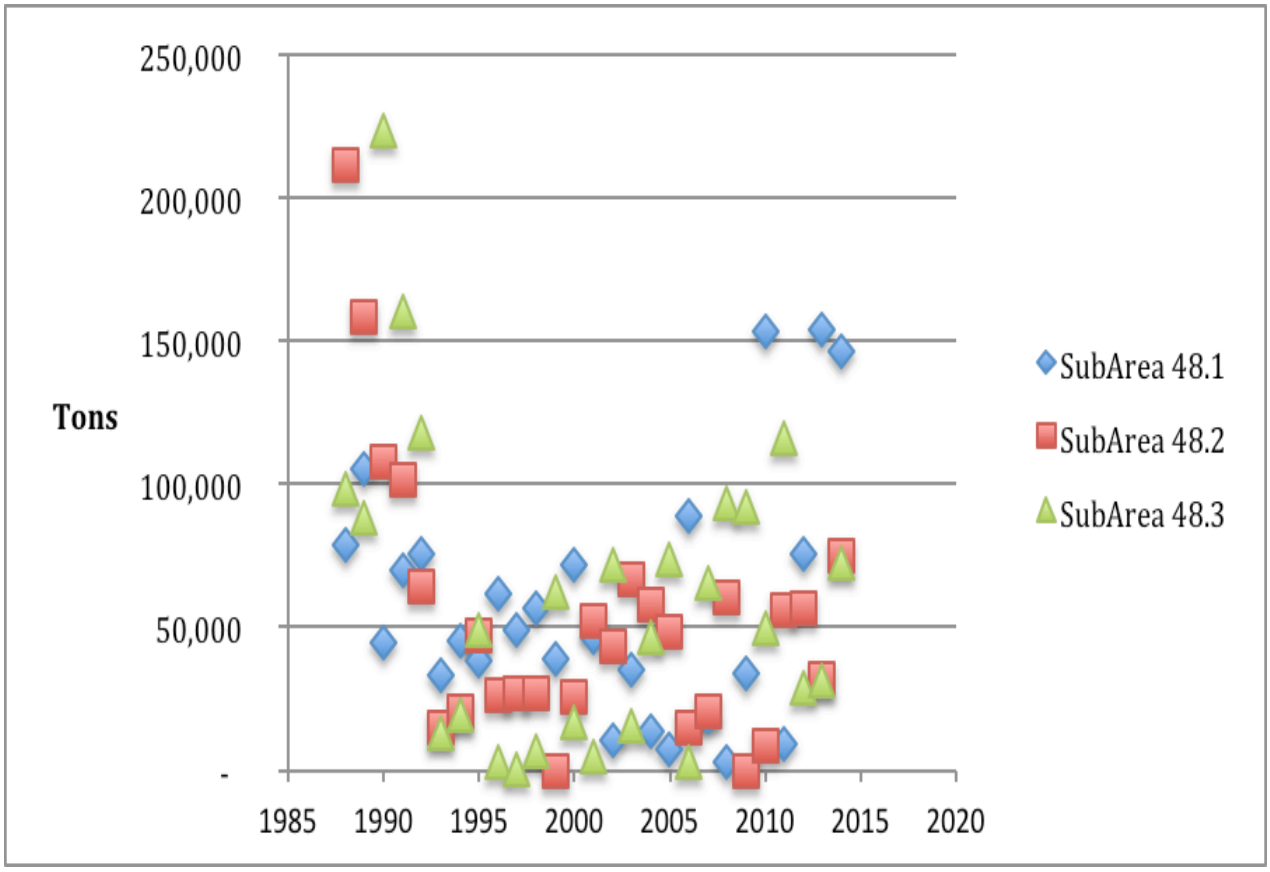
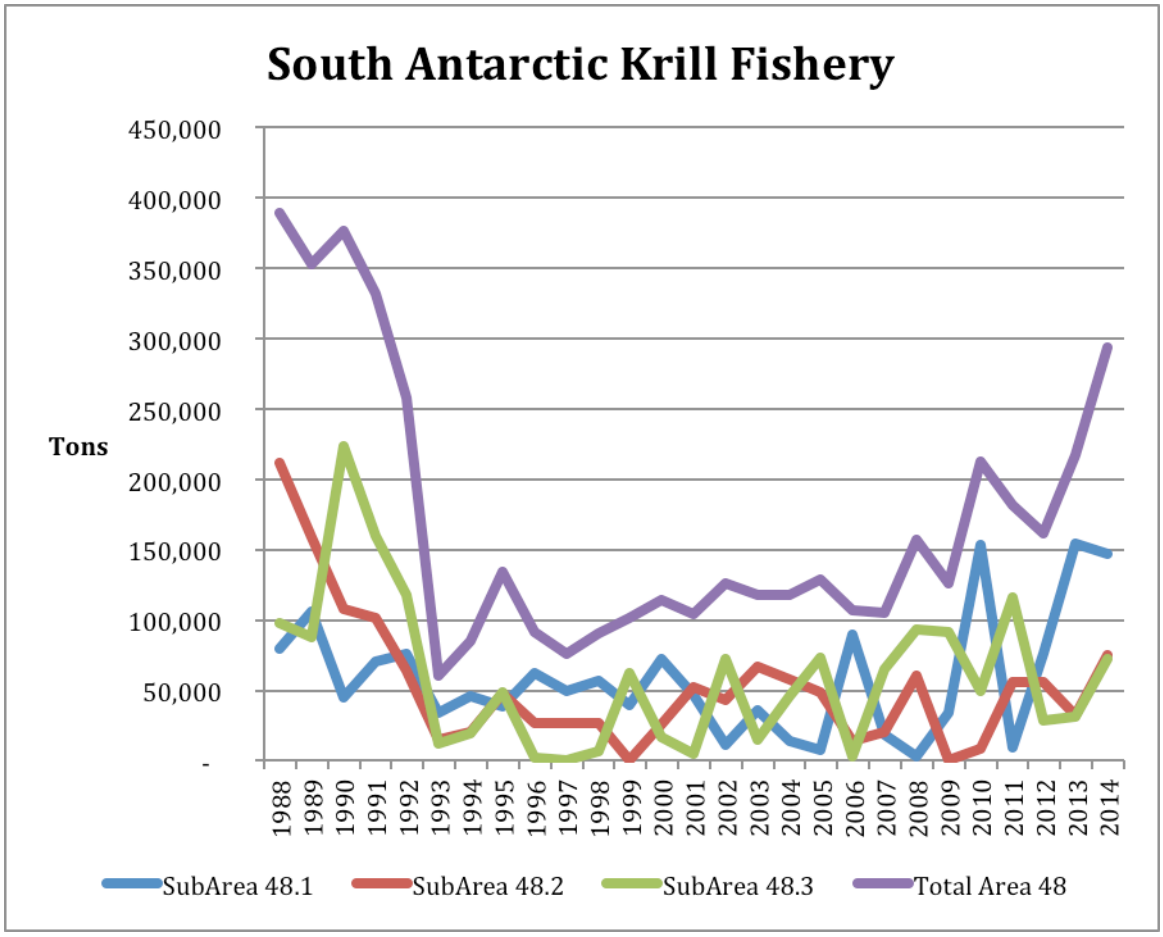


On a 30-year direct average, FAO48 sub-region 1 has close to 40% of the annual krill catch, while sub-regions 48.2 and 48.3 have each around 30% of the annual catch.



Source: Tharos with CCAMLR and industry data.



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