

KSA725 INTERNSHIP PROJECT PROPOSAL

Project Title

Now we know what we don't know – understanding Illegal, Unreported and Unregulated (IUU) fishing in the Southern Ocean.

Proposed Supervisors

IMAS supervisor(s)

Name: [Julia Jabour](#)

Centre: [Oceans and Cryosphere](#)

Area of expertise: [Unit Coordinator](#)

Expected time commitment to project: .2

Supervisor(s) from other institutions

Name: [Keith Reid and Sarah Lenel](#)

Position and location: [Science Manager and Fishery and Compliance Manager,](#)

Institution: [CCAMLR Secretariat](#)

Area of expertise: [Fisheries Management](#)

Expected time commitment to project: $\frac{1}{2}$ day per week each

Background

Illegal, Unreported and Unregulated fishing (IUU) fishing is a serious global problem that contributes to overfishing, creates unfair competition, and impedes sustainable fisheries. IUU fishing respects neither national boundaries nor international attempts to manage fishing on the high seas.

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) identified the treat of IUU fishing for toothfish in the early 1990s. It sparked considerable concern for the Commission and resulted in the implementation of a range of measures to detect, deter and eliminate IUU fishing. In addition to the implementation of these measures, CCAMLR also commenced efforts to estimate IUU catch.

CCAMLR developed a deterministic methodology to assess IUU catches that estimated the number of days fished and the likely catch rate in a given area associated with an IUU vessel sighting. The total IUU catch was the sum of the estimates for all IUU vessel sightings.

In 2006, the Commission convened a Joint Assessment Group (JAG) to develop a new methodology for estimating IUU catches. JAG noted that the methodology used by CCAMLR did not identify uncertainties in particular:

- IUU catch estimates did not include a credible minimum and maximum range
- there was no criterion by which to categorise levels of surveillance coverage by season or by area
- fishing trip duration was calculated in various ways
- the extrapolation of IUU catch estimates for periods when surveillance was absent did not identify the number of fishable days per month, particularly for October and November, and per area
- Catch per unit effort (CPUE) was defined separately for different types of vessel (and may take account of gear, hold size, type of vessel and tonnage) and the impact of possible transshipments

Despite the work of JAG, CCAMLR's methodology to estimate IUU catch remained unchanged.

In 2011 and again in 2012, the Secretariat highlighted to the Commission that the IUU catch estimate methodology did not take into account a range of uncertainties and was not effort-corrected in regard to surveillance effort. The Secretariat highlighted that it was not possible to distinguish between an apparent decrease in IUU catch over time and a decrease in surveillance effort that results in fewer sightings. In light of this, the Secretariat informed the Commission it would no longer estimate IUU catch using the historical methodology.

In 2014 the Secretariat provided an overview of the spatial and temporal distribution of IUU activity within the Convention Area over the past ten years. The objective of the analysis was not to estimate area-specific IUU catch amounts, but to spatially characterise observed IUU activity, including IUU fishing gear recoveries, in the Convention Area.

In 2013, the Scientific Committee agreed that an analysis of IUU fishing that brings together all available information to develop a better understanding of IUU activity and trends in the Convention Area is desirable. The Scientific Committee encouraged the development of approaches to estimate IUU removals where surveillance-based estimates cannot be effort-corrected.

Possible Data Sources

Member reports of sightings of IUU or other vessels

Sightings of IUU-listed vessels and unknown vessels are reported by Contracting Parties vessels operating in the Convention Area.

Information from the CCAMLR Scheme of International Scientific Observation

Logbooks used by Scientific Observers contain a specific sheet for recording vessel sightings. There is also a section in the Cruise Report for observers to provide additional information related to IUU fishing, including the recovery of gear than could be attributed to IUU vessels (i.e. gillnet must derive from IUU fishing activity as gillnet is not permitted in CCAMLR licenced fisheries).

Information provided by Members from active or passive surveillance

This is information provided in meeting reports, or directly to the Secretariat, of IUU related activity. Such information may provide less quantifiable information but is important in developing an overall picture of the distribution and activity of IUU vessels.

Automatic Identification System (AIS) information

AIS is an automatic tracking system used on vessels for identifying and locating vessels by electronically exchanging data with other nearby vessels, AIS base stations, and satellites. AIS information supplements marine radar for collision avoidance at sea and may provide information on fishing vessel presence in the Convention Area.

United Nations (UN) Comtrade Data

UN Comtrade data indicates that the volume of toothfish traded globally may be greater than reported to CCAMLR and the flow of trade into CCAMLR non-Contracting Parties (NCPs) may be broader than previously thought and identified through CCAMLR data. Other trade data sources may also prove useful in understanding the global trade of toothfish.

Satellite Synthetic Aperture Radar (SAR)

SAR is able to detect metallic vessels and a correlation analysis of vessels detected by radar with VMS data and AIS data can be undertaken to determine vessels operating in the Convention Area which are not linked to an active position report.

Project Outline, Objectives and Methods

This project will investigate:

- the history of IUU fishing for toothfish in the Convention Area
- the development of IUU catch estimate methodology over time
- the availability and practicality of data available to understand IUU activity
- other possible sources of information to develop a better understanding of IUU activity

The project will undertake an analysis of current IUU activity that brings together all available information to develop a better understanding of IUU activity and trends. The project will also seek to develop an approach to estimate IUU catch where surveillance-based estimates cannot be effort-corrected and apply this approach to historical estimates of IUU catch.