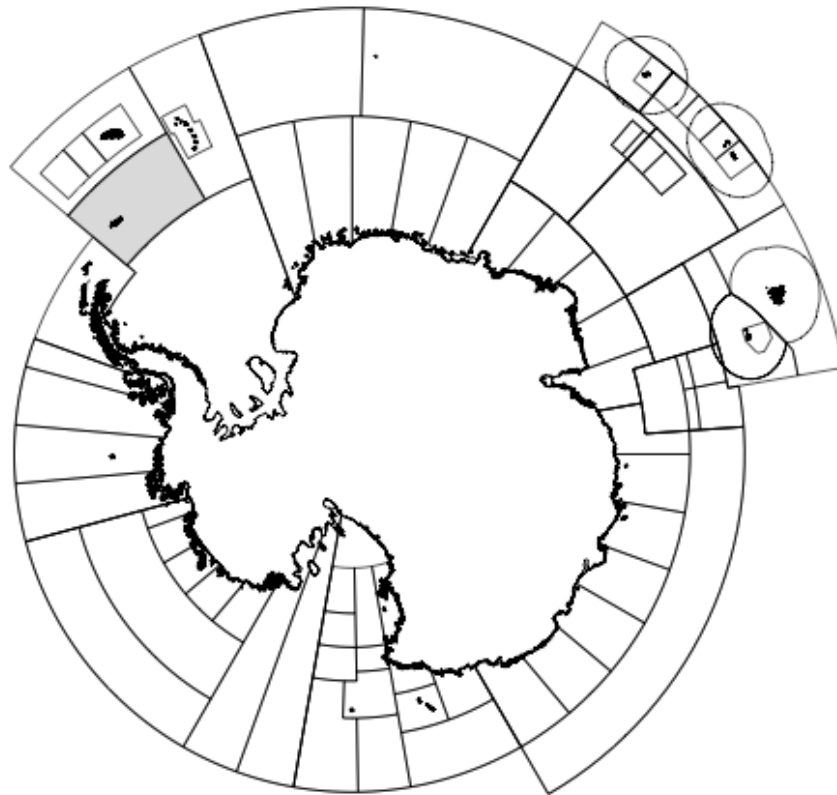




**Fishery Report 2015:
Dissostichus spp.
(Subarea 48.2)**

FISHERY REPORT



The map above shows the management areas within the CAMLR Convention Area, the specific region related to this report is shaded.
Throughout this report the CCAMLR fishing season is represented by the year in which that season ended, e.g. 2015 represents the 2014/15 CCAMLR fishing season (from 1 December 2014 to 30 November 2015).

Fishery Report 2015: *Dissostichus* spp. Subarea 48.2

Introduction

1. Research fishing for *Dissostichus* spp. in Subarea 48.2 was first conducted by Chile in 1998, when seven hauls were conducted and 36 kg of Patagonian toothfish (*Dissostichus eleginoides*) were caught. In 2015, Ukraine began a multiyear research program and conducted 29 hauls with a total catch of 31 tonnes of Antarctic toothfish (*D. mawsoni*) and 4 tonnes of *D. eleginoides*.

Description of the fishery

Catch and CPUE

2. The total catch and catch-per-unit-effort (CPUE) reported from the research surveys that have been conducted in Subarea 48.2 are comparatively low (Table 1).

Table 1: Catch and CPUE (kg/hook) of *D. mawsoni* and *D. eleginoides* in Subarea 88.3.

Year	<i>D. mawsoni</i>		<i>D. eleginoides</i>	
	Catch	CPUE	Catch	CPUE
1998			<1	0.002
2015	31		4	

Tag releases and recaptures

3. In 2015 a total of 157 *D. mawsoni* were tagged and released.

Inventory of age data

4. No age data are available for this subarea.

Model parameters available

5. No specific parameters are available for this subarea.

Other sources of mortality

6. No specific parameters are available for this subarea.

Research plan summary

Data collection plan

7. Ukraine will undertake a research plan using longline gear (trotline) to sample the toothfish populations in the eastern areas of Subarea 48.2. The research will be undertaken over three years (2015–2017). The purpose of the research is to characterise the toothfish populations found there to better understand stock structure, movement patterns and improve estimation of population characteristics in the northern Weddell/Scotia Sea and the border between the two species of *Dissostichus*. Additional outcomes of the research relate to mapping of the fishable area, documenting relative abundance of *D. eleginoides* and *D. mawsoni*, tagging toothfish for biomass estimation and for stock linkage studies, input into spatial population models and collecting information on distribution, relative abundance and life history of by-catch species.

8. In 2014, the Scientific Committee endorsed the advice of WG-FSA (SC-CAMLR-XXXIII, Annex 7, paragraph 5.48) that the research plan of Ukraine in Subarea 48.2 proceed in 2015 with an effort limit of 30 lines and catch limit of 75 tonnes of *Dissostichus* spp. with tagging at a rate of 5 toothfish per tonne. This research program is to be continued in 2016 with the following specific objectives:

1. To utilise the expertise and experience of crew aboard vessels to explore and locate fishable habitat and sample toothfish in Subarea 48.2.
2. To document the spatial distribution of toothfish species in the area to east of the South Orkney Islands, thus providing catch and biological observations to test and develop the functionality of spatial population models of the north Weddell Sea region.
3. To tag toothfish and collect biological samples to further understand toothfish movement, migration, spawning and stock linkages within Area 48 and adjacent waters.

9. In 2015, Chile proposed to undertake research fishing in Subarea 48.2. The aim of the Chilean study is to cooperate with the generation of enough data upon which to base a management advice in accordance with the requirements of the Commission in a manner that allows it to carry out stock assessments of *Dissostichus* spp. in Subarea 48.2 and to develop fisheries of this resource in a sustainable manner. The Chilean proposal presented the following specific objectives:

- (i) determine spatial and bathymetric distribution of *Dissostichus* spp. in Subarea 48.2
- (ii) generate basic information to identify population units of *Dissostichus* spp.
- (iii) estimate an abundance index of *Dissostichus* spp. based on catch and effort data for the surveyed area
- (iv) identify suitable areas to develop fishing activities of *Dissostichus* spp. in Subarea 48.2.

10. In addition, Chile proposed the following specific objectives and general methodology:

- (i) Determination of spatial and bathymetric distribution –
 - estimation of the probability of occurrence of *Dissostichus* spp. (site-occupancy models).
- (ii) Generating basic information to identify population units –
 - microelement analysis of otoliths
 - genetic techniques (microsatellite and mitochondrial DNA)
 - parasitological techniques (analysis of stomach content).
- (iii) Estimating an abundance index of *Dissostichus* spp. from catch and effort data for the surveyed area –
 - estimation of index of local abundance using catchability assumed constant between a reference region and the surveyed area.
- (iv) Abundance estimates of *Dissostichus* spp. based on tag-recapture data –
 - standard methodology used by CCAMLR.
- (v) Identifying suitable areas to develop fishing operations –
 - estimation of the probability of occurrence of suitable fishing areas (site-occupancy models).

11. The Ukrainian vessel *Simeiz* and the Chilean vessel *Puerto Ballena* will undertake research in Subarea 48.2 in 2016 (Table 2). Fishing locations proposed for 2016 are shown in Figure 1 (note that the ‘research block’ for this subarea shown in SC-CAMLR-XXXIV, Annex 7, Figure 2, is a simplified polygon that encompasses all of the proposed fishing locations).

Table 2: Summary of research plan.

Category	Items
Current research phase	Prospecting
Catch limit estimation	CPUE analogy with northern part of subarea 48.6
Stock area	Currently limited to area of prospecting zone NE of the South Orkney Islands (see Figure 1)
Fishery data	Catch, effort, VME
Biological data	Length, weight, sex, maturity, otoliths

Advice by the Scientific Committee

12. The advice from the Scientific Committee on this research proposal is in SC-CAMLR-XXXIV, paragraphs 3.252 to 3.264. In particular, the Scientific Committee agreed that, consistent with other data-poor regions in the Convention Area, the current catch levels should not

increase with the increase in the number of participants undertaking the research. Since there was no new advice on the catch limit in Subarea 48.2, the Scientific Committee recommended to retain the catch limit of 75 tonnes for 2016. The Scientific Committee also noted that it would be desirable to avoid Olympic research fishing, which could be avoided by allocating catch to each Member in a transparent fashion while allowing flexibility by reallocating catch.

13. The Commission endorsed the advice that half of the catch limit be allocated to each of the *Simeiz* and the *Puerto Ballena*, and that the catch of the Chilean vessel be reallocated to the Ukrainian vessel fishing in March should the Chilean vessel not be able to fish in February due to, for example, unfavourable sea-ice conditions.

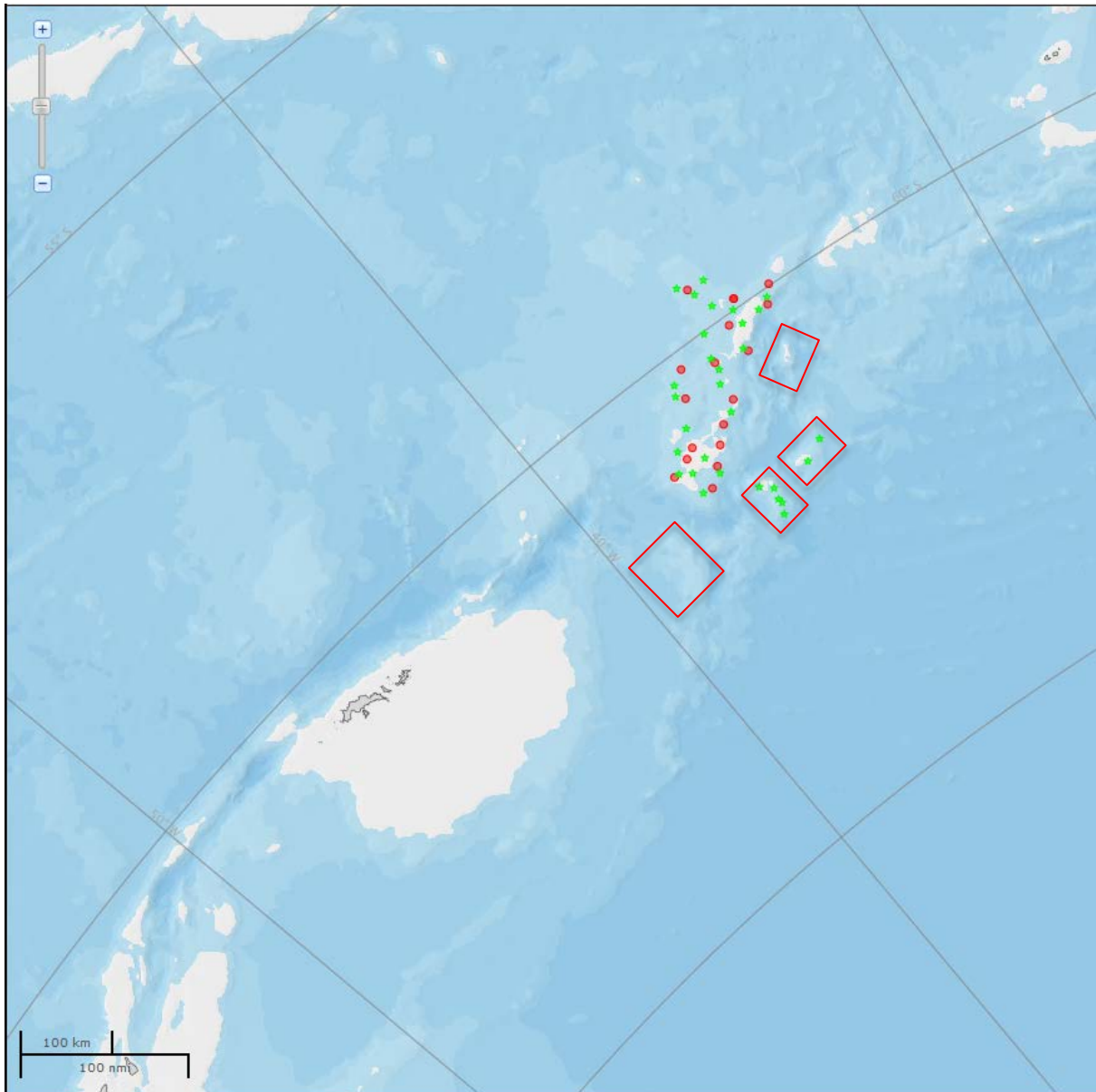


Figure 1: Research set locations proposed by Chile (green) and Ukraine (red) and approximate research block locations (proposed by Ukraine) in Subarea 48.2.