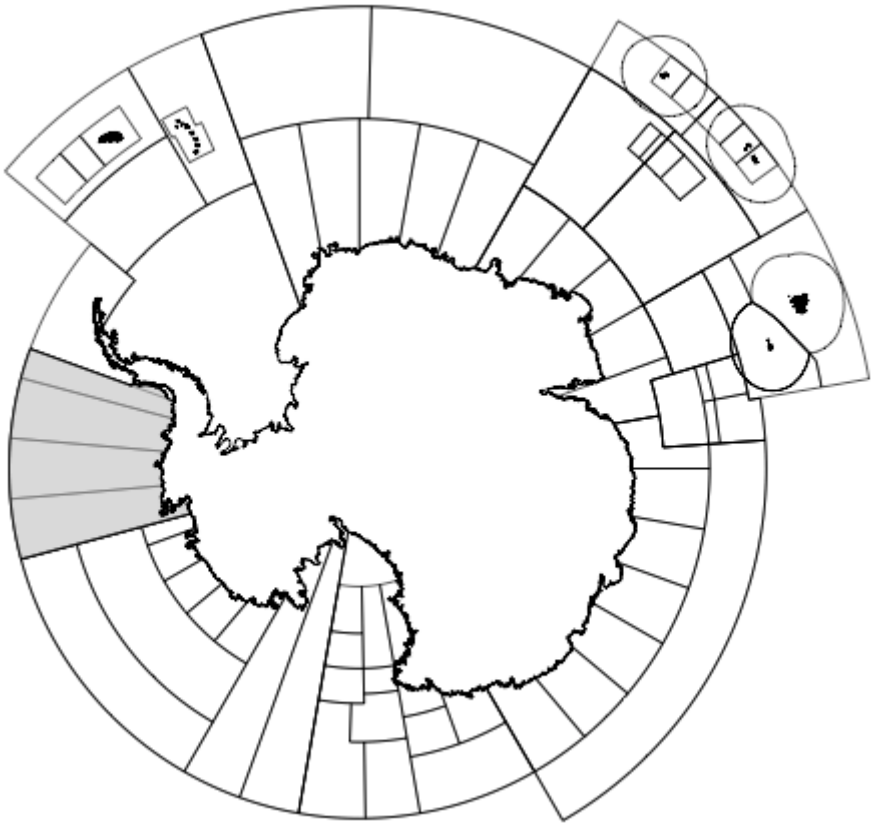
CCAMLR

Commission for the Conservation of Antarctic Marine Living Resources
Commission pour la conservation de la faune et la flore marines de l'Antarctique
Комиссия по сохранению морских живых ресурсов Антарктики
Comisión para la Conservación de los Recursos Vivos Marinos Antárticos

FISHERY REPORT

# Fishery Report 2017: *Dissostichus mawsoni* (Subarea 88.3)



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 2017: *Dissostichus mawsoni***
**Subarea 88.3**

## Introduction

1. Research fishing in Subarea 88.3 has been conducted by Chilean, New Zealand and Russian flagged vessels since 1998 and was conducted by a Korean flagged vessel in 2016 and 2017.

## 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 88.3 are comparatively low (Table 1).

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

| Year | *D. mawsoni* | *D. eleginoides* |
|---|---|---|
| 1998 | 288 | 14 |
| 2005 | 1639 | 37 |
| 2011 | 5230 | - |
| 2012 | 4066 | 144 |
| 2016 | 106241 | 281 |
| 2017 | 118508 | 0 |

### Illegal, unreported and unregulated (IUU) fishing

3. There is no record of illegal, unreported and unregulated (IUU) fishing activities in Subarea 88.3 between 2006 and 2017.

### Tag releases and recaptures

4. A total of 1 198 Antarctic toothfish (*Dissostichus mawsoni*) have been tagged and released; there have been no recaptures of tagged fish (Table 2).

Table 2: Number of tagged and released and recaptured *Dissostichus mawsoni* in Subarea 88.3.

| Year | Tagging and release | Recapture |
|---|---|---|
| 2005 | 8 | 0 |
| 2011 | 30 | 0 |
| 2012 | 93 | 0 |
| 2016 | 470 | 0 |
| 2017 | 597 | 0 |

### Length-frequency distributions of catches

5. The length-frequency distributions of *D. mawsoni* caught during research in this subarea in 2011, 2012, 2016 and 2017 are presented in Figure 1.

### Inventory of age data

6. No age data are available for this subarea.

### Model parameters available

7. No specific parameters are available for this subarea other than length–weight relationship for *D. mawsoni* and Patagonian toothfish (*D. eleginoides*).

### Other sources of mortality

8. No specific parameters are available for this subarea.

## Research plan summary

9. There have been a total of 95 research hauls and 131 tagged fish as part of surveys conducted by Chilean, New Zealand and Russian flagged vessels since 1998. This level of research activities means that there is insufficient data to assess the toothfish stock in this subarea. It is clear that the previous surveys were influenced by sea-ice, however, the ice concentration in the west of the Antarctic is reducing and this has led the Republic of Korea to propose a multi-year research plan for Subarea 88.3 starting in 2016. This research plan is in the prospecting phase and the specific objectives are to:

(i) explore fishable habitat and sample toothfish in the northern slope and southern shelf

(ii) increase the number of tagged and released fish in the fishable habitat

(iii) assess biomass of *Dissostichus* spp.

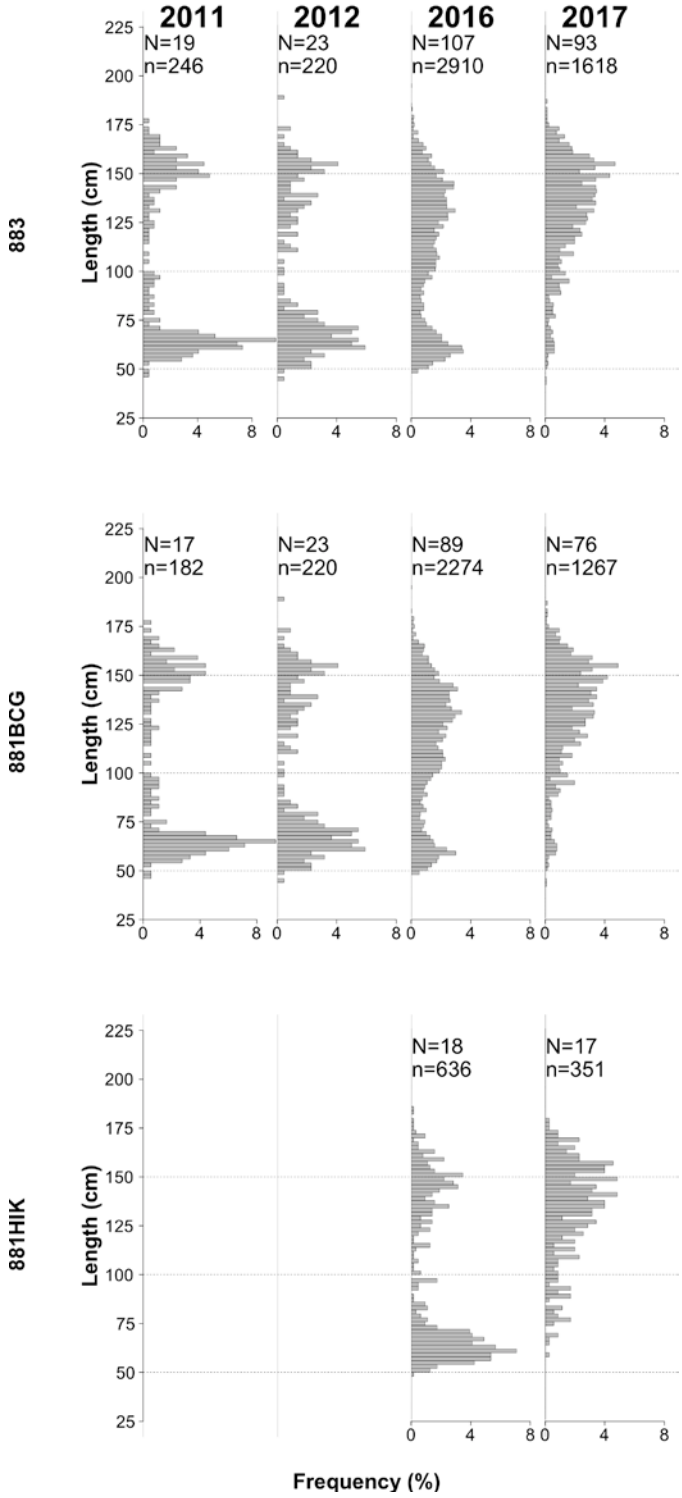



Figure 1: Annual length-frequency distributions of *Dissostichus mawsoni* caught in Subarea 88.3 in 2011, 2012, 2016 and 2017. The number of hauls from which fish were measured (N) and the number of fish measured (n) in each year are provided.

10. As well as providing these key data on the toothfish stock in Subarea 88.3, the research will also provide data with which to understand how the stock in this region is linked with the stocks in other management areas, in particular in Subareas 88.1, 88.2 and in Area 48.

## Data collection plan

11. The location and depth of the start and end of every set, soaking and hauling times, number and species of fish lost at surface, number of hooks set, length of the set line, bait type, baiting success (%) and hook type will be collected according to the requirements of Conservation Measure (CM) 41-01, Annex 41-01/A. Vulnerable marine ecosystem (VME) indicator unit data and effort reports will be provided to the Secretariat in accordance with CM 22-07.

12. The length, weight, sex and maturity stage of up to 30 toothfish and all by-catch species will be measured from each haul. Otoliths will be collected from all toothfish sampled and will be returned to Korea to be processed for age determination and estimates of growth rates.

13. In addition to the above, a conductivity temperature depth probe (CTD) recording device will be attached to the longline fishing gear each set to collect water temperature and salinity with depth data. The CTDs and the data collected will be returned to Korea for data processing. Environmental data such as wind direction, wind speed, sea-ice condition, air temperature and weather will also be collected (see Table 3).

14. The research will be conducted by the Korean-flagged vessel *Greenstar*.

Table 3: Summary of research.

| Category | Items |
|---|---|
| Current research phase | Prospecting |
| Catch limit estimation | CPUE analogy with Subarea 88.2 |
| Stock area | Subarea 88.3: 70°W to 105°W |
| Fishery data | Catch, effort, VME |
| Biological data | Length, weight, sex, maturity, otolith |
| Environmental data | Water temperature, salinity, wind direction, wind speed, sea-ice condition, air temperature |

## Conservation measures and advice from the Scientific Committee for research fishing in 2017 and 2018

15. Directed fishing for *Dissostichus* spp. in Subarea 88.3 is prohibited under CM 32-02 at least until further scientific information is gathered and reviewed by the Scientific Committee and the Working Group on Fish Stock Assessment (WG-FSA).

16. The advice from the Scientific Committee in 2016 on this research proposal is presented in SC-CAMLR-XXXV, paragraphs 3.255 and 3.256. The Scientific Committee recommended that the catch limits and priority for each research block should be as in 2016 should ice conditions allow. The location of the research blocks and the catch limits and relative priorities for 2017 are provided in Figure 2 and Table 4 respectively.

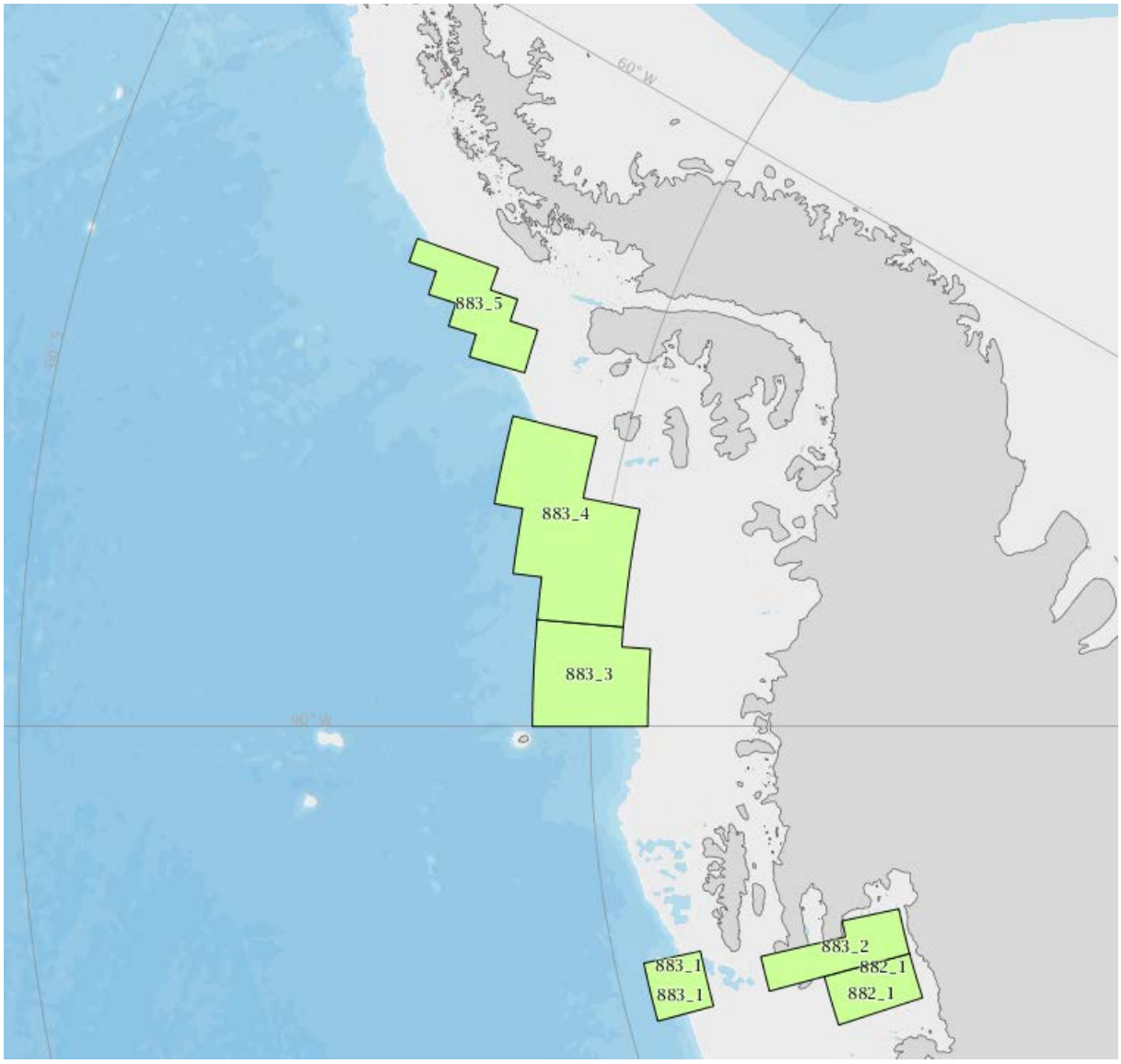



Figure 2: Location of research blocks in Subarea 88.3.

Table 4: Research catch limits in Subarea 88.3.

| Research block | Catch limit (tonnes) | Comment | Catch 2017 (tonnes) |
|---|---|---|---|
| 883_1 | 21 | High priority | 0 |
| 883_2 | 29 | High priority | 25 |
| 883_3 | 31 | Secondary priority | 29 |
| 883_4 | 52 | Tertiary priority | 48 |
| 883_5 | 38 | Tertiary priority | 12 |

17. In 2017, the Scientific Committee in recommended that the catch limits for the Korean and New Zealand joint research plan in Subarea 88.3 be endorsed for 2018 (Table 5 and SC-CAMLR-XXXVI, paragraph 3.142). The areas in Table 5 identified as P6–P10 are prospecting areas and are not defined as research blocks.

Table 5: Catch limits agreed by the Scientific Committee for 2018.

| Subarea | Area | Species | Catch limit 2017 (tonnes) | Agreed catch limit 2018 (tonnes) | Conservation measure (CM) containing catch limit |
|---|---|---|---|---|---|
| 88.3 | 883_1 | *D. mawsoni* | 21 | 20 | No CM |
| 88.3 | 883_2 | *D. mawsoni* | 29 | 25 | No CM |
| 88.3 | 883_3 | *D. mawsoni* | 31 | 50 | No CM |
| 88.3 | P_6 | *D. mawsoni* | n/a | 30 | No CM |
| 88.3 | P_8 | *D. mawsoni* | n/a | 10 | No CM |
| 88.3 | 883_4 | *D. mawsoni* | 52 | 50 | No CM |
| 88.3 | P_7 | *D. mawsoni* | n/a | 30 | No CM |
| 88.3 | P_9 | *D. mawsoni* | n/a | 10 | No CM |
| 88.3 | 883_5 | *D. mawsoni* | 38 | 10 | No CM |
| 88.3 | P_10 | *D. mawsoni* | n/a | 10 | No CM |