

**FISHERY REPORT: *DISSOSTICHUS ELEGINOIDES*
SOUTH GEORGIA (SUBAREA 48.3)**

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FISHERY REPORT: *DISSOSTICHUS ELEGINOIDES* SOUTH GEORGIA (SUBAREA 48.3)

1. Details of the fishery

1.1 Reported catch (time series)

In 2004, the Commission agreed to subdivide Subarea 48.3 into one area containing the South Georgia–Shag Rocks (SGSR) stock and other areas, to the north and west, that do not include the SGSR stock. Within the SGSR area, the Commission defined three Management Areas (A, B and C) (Conservation Measure 41-02/A).

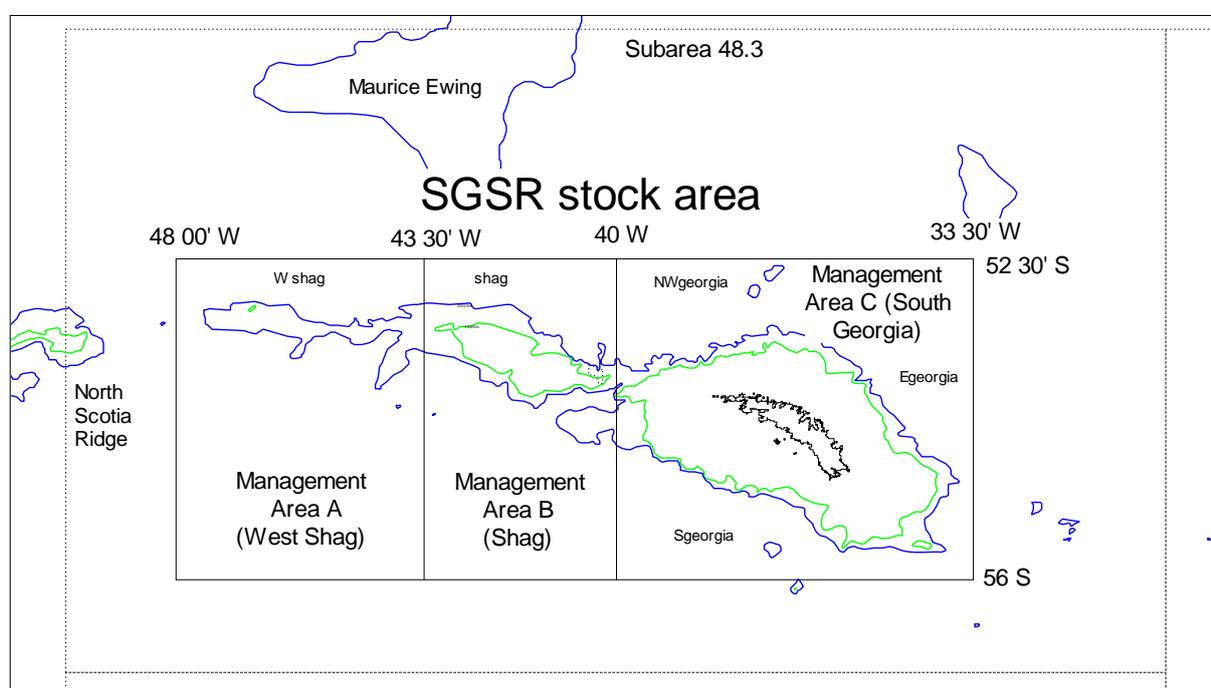


Figure 1: Definition of the SGSR stock area, with its three Management Areas A, B and C.

2. The catch limits in the 2007/08 season for Management Areas A, B and C were 0 (excepting 10 tonnes for research fishing), 1 176 and 2 744 tonnes respectively, with an overall catch for SGSR of 3 920 tonnes. The total declared catch was 3 856 tonnes. Catches in areas A, B and C were 8 tonnes, 1 103 tonnes and 2 744 tonnes respectively.

3. Most catch has been taken by longlines, but 66 tonnes were taken by pots in 2000/01, 24 tonnes in 2005/06 and 55 tonnes in 2007/08. These data are included in the total catch. With respect to the distribution of effort, previous reports have displayed the spread of the effort in the fishery over time. Current effort is spread evenly over the fished areas.

1.2 IUU catch

4. There has been no evidence of IUU fishing in Subarea 48.3 from 2005/06 (Table 1).

Table 1: Catch history for *Dissostichus eleginoides* in Subarea 48.3. (Source: STATLANT data for past seasons, and catch and effort reports for current season, WG-FSA-08/10 Rev. 2 and past reports for IUU catch.) SGSR: South Georgia–Shag Rocks stock; West: area outside the SGSR stock area.

| Season | Regulated fishery | | Estimated IUU catch (tonnes) | Total removals (tonnes) | | | |
|---------|-------------------------|---|------------------------------------|-------------------------|------|---------|----------|
| | Effort (no. vessels) | <i>D. eleginoides</i> catch (tonnes) | | SGSR | West | Subarea | |
| | | Limit | | | | | Reported |
| 1984/85 | 1 | - | 521 | 0 | 517 | 4 | 521 |
| 1985/86 | 1 | - | 733 | 0 | 733 | 0 | 733 |
| 1986/87 | 1 | - | 1954 | 0 | 1954 | 0 | 1954 |
| 1987/88 | 2 | - | 876 | 0 | 876 | 0 | 876 |
| 1988/89 | 3 | - | 7060 | 144 | 6963 | 241 | 7204 |
| 1989/90 | 2 | - | 6785 | 437 | 6838 | 384 | 7222 |
| 1990/91 | 1 | 2500 | 1756 | 1775 | 3531 | 0 | 3531 |
| 1991/92 | 23 | 3500 | 3809 | 3066 | 6864 | 11 | 6875 |
| 1992/93 | 18 | 3350 | 3020 | 4019 | 7039 | 0 | 7039 |
| 1993/94 | 4 | 1300 | 658 | 4780 | 5246 | 191 | 5438 |
| 1994/95 | 13 | 2800 | 3371 | 1674 | 4972 | 73 | 5045 |
| 1995/96 | 13 | 4000 | 3602 | 0 | 3530 | 72 | 3602 |
| 1996/97 | 10 | 5000 | 3812 | 0 | 3808 | 4 | 3812 |
| 1997/98 | 9 | 3300 | 3201 | 146 | 3347 | 0 | 3347 |
| 1998/99 | 12 | 3500 | 3636 | 667 | 4303 | 0 | 4303 |
| 1999/00 | 17 | 5310 | 4904 | 1015 | 5910 | 9 | 5919 |
| 2000/01 | 18 | 4500 | 4047 | 196 | 4232 | 11 | 4243 |
| 2001/02 | 17 | 5820 | 5742 | 3 | 5717 | 29 | 5745 |
| 2002/03 | 19 | 7810 | 7528 | 0 | 7510 | 18 | 7528 |
| 2003/04 | 17 | 4420 | 4497 | 0 | 4460 | 37 | 4497 |
| 2004/05 | 8 | 3050 | 3039 | 23 | 3062 | 0 | 3062 |
| 2005/06 | 11 | 3556 | 3535 | 0 | 3535 | 0 | 3535 |
| 2006/07 | 11 | 3554 | 3539 | 0 | 3537 | 2 | 3539 |
| 2007/08 | 11 | 3920 | 3856 | 0 | 3856 | 0 | 3856* |

* Does not include 2 tonnes taken during trawl survey.

1.3 Size distribution of catches (time series)

5. Catch-weighted length frequencies for *D. eleginoides* from 1984/85 to 2007/08 are shown in Figure 2.

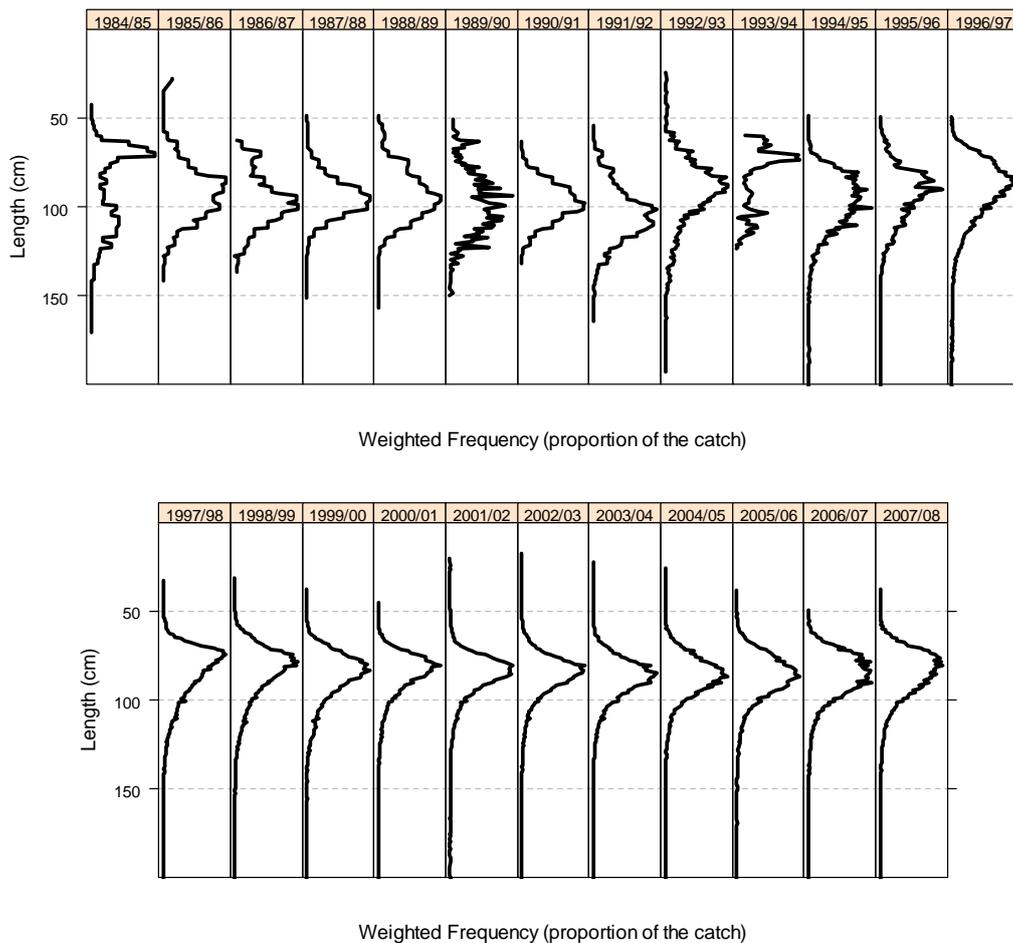


Figure 2: Catch-weighted length frequencies for *Dissostichus eleginoides* in Subarea 48.3 for the early time series (1984/85 to 1996/97) and later time series (1996/97 to present). (Source: observer, fine-scale and STATLANT data.)

2. Stocks and areas

6. No assessment was undertaken in 2008. The assessment undertaken in 2007 is reported in SC-CAMLR-XXVI, Annex 5, Appendix J.

3. Parameters and available data

7. No assessment was undertaken in 2008. The assessment undertaken in 2007 is reported in SC-CAMLR-XXVI, Annex 5, Appendix J.

4. Stock assessment

8. No assessment was undertaken in 2008. The assessment undertaken in 2007 is reported in SC-CAMLR-XXVI, Annex 5, Appendix J.

5. By-catch of fish and invertebrates

5.1 Estimation of by-catch removals

9. The priority by-catch taxa for which assessments of status are required are macrourids and rajids (SC-CAMLR-XXI, Annex 5, paragraphs 5.151 to 5.154). Catches of by-catch species groups (macrourids, rajids and other species) reported in fine-scale data, their respective catch limits, and number of rajids cut from lines and released alive are summarised in Table 2.

Table 2: Catch history for by-catch species (macrourids, rajids and other species), catch limits and number of rajids released alive in Subarea 48.3. Catch limits are for the whole fishery (see Conservation Measure 41-02 for details). (Source: fine-scale data.)

| Season | Macrourids | | Rajids | | | Other species | |
|---------|----------------------|-------------------------|----------------------|-------------------------|-----------------|----------------------|-------------------------|
| | Catch limit (tonnes) | Reported catch (tonnes) | Catch limit (tonnes) | Reported catch (tonnes) | Number released | Catch limit (tonnes) | Reported catch (tonnes) |
| 1987/88 | - | 0 | - | 1 | - | - | 0 |
| 1988/89 | - | 1 | - | 11 | - | - | 0 |
| 1989/90 | - | 0 | - | 1 | - | - | 0 |
| 1990/91 | - | 1 | - | 4 | - | - | 0 |
| 1991/92 | - | 1 | - | 2 | - | - | 0 |
| 1992/93 | - | 2 | - | 0 | - | - | 0 |
| 1993/94 | - | 0 | - | 12 | - | - | 0 |
| 1994/95 | - | 12 | - | 90 | - | - | 10 |
| 1995/96 | - | 37 | - | 54 | - | - | 0 |
| 1996/97 | - | 34 | - | 43 | - | - | 2 |
| 1997/98 | - | 21 | - | 13 | - | - | 2 |
| 1998/99 | - | 21 | - | 19 | - | - | 9 |
| 1999/00 | - | 18 | - | 12 | - | - | 3 |
| 2000/01 | - | 21 | - | 27 | - | - | 1 |
| 2001/02 | 291 | 51 | 291 | 25 | - | - | 29 |
| 2002/03 | 390 | 75 | 390 | 38 | - | - | 14 |
| 2003/04 | 221 | 82 | 221 | 38 | - | - | 10 |
| 2004/05 | 152 | 121 | 152 | 9 | - | - | 20 |
| 2005/06 | 177 | 137 | 177 | 7 | 21 056 | - | 38 |
| 2006/07 | 177 | 130 | 177 | 4 | 9 265 | - | 27 |
| 2007/08 | 196 | 161 | 196 | 12 | 19 558 | - | 37 |

Estimated cut-off catch

10. Estimates of total mortality for fish cut from longlines in Subarea 48.3 were made in 2003. Sufficient data to repeat these calculations have only been available for rajids since 2006/07. An estimate of total mortality was calculated using a linear relationship between full survivorship at depths ≤ 900 m and zero survivorship at depths $> 2\ 000$ m.

11. Reported numbers of rajids released were multiplied by the above ‘deaths by depth’ factor and combined with numbers caught to give an estimate of total mortality by numbers of 10 236 rajids. This number multiplied by an average weight for rajids of 7.68 kg (derived from fine-scale data for Subarea 48.3 for 2007/08) gives an estimate of total rajid mortality by weight of 78.6 tonnes.

5.2 Assessments of impact on affected populations

12. A preliminary assessment of rajid populations in Subarea 48.3 using a surplus production model implemented in a Bayesian framework was presented at WG-SAM-07 (WG-SAM-07/11). The Working Group noted that there were currently insufficient data to inform the assessment and that the results were strongly dependent on the informative priors for the two catchability parameters, and the intrinsic rate of increase, r . However, it also noted that the assessment was likely to be a ‘worst-case’ scenario, because the q for toothfish is likely to be higher than the q for rajids. The fits to the CPUE data were generally poor, and the posterior distributions for the two catchability parameters and r were very similar to their prior distributions in the base case. When an uninformed prior was used for K and the two q parameters, the right-hand tail of the posterior distribution of K was very wide. It was noted that the assessment should be considered as a risk assessment rather than a stock assessment.

5.3 Mitigation measures

13. By-catch limits and move-on rules are included in the annual conservation measure established for this fishery (Conservation Measure 41-02). In addition, mitigation measures for rajids consist of cutting rajids off lines at the water surface.

6. By-catch of birds and mammals

14. Details of seabird by-catch in longline and pot fisheries are summarised in Table 3 (taken from SC-CAMLR-XXVII, Annex 6, Table 3). No new estimates of potential seabird removals by IUU fishing were calculated in 2008. Previous estimates are summarised in SC-CAMLR-XXVI/BG/32 and SC-CAMLR-XXVI, Annex 6, Part II, Table 20.

Table 3: Seabird observed mortality rate and total estimated mortality of seabird by-catch in Subarea 48.3 (from SC-CAMLR-XXVII, Annex 6, Table 3).

| Season | Mortality rate (birds per thousand hooks) | Total estimated mortality (number of birds) |
|---------|--|--|
| 1996/97 | 0.23 | 5 755 |
| 1997/98 | 0.032 | 640 |
| 1998/99 | 0.013* | 210* |
| 1999/00 | 0.002 | 21 |
| 2000/01 | 0.002 | 30 |
| 2001/02 | 0.0015 | 27 |
| 2002/03 | 0.0003 | 8 |
| 2003/04 | 0.0015 | 27 |
| 2004/05 | 0.0015 | 13 |
| 2005/06 | 0 | 0 |
| 2006/07 | 0 | 0 |
| 2007/08 | 0 | 0 |

* Excluding *Argos Helena* line weighting experiment cruise.

15. Ad hoc WG-IMAF assessed the level of risk of incidental mortality of seabirds in Subarea 48.3 as category 5 (high) (SC-CAMLR-XXVI/BG/31).

6.1 Mitigation measures

16. Conservation Measure 25-02 applies to this subarea.

6.2 Interactions involving marine mammals with longline fishing operations

17. There was one report of incidental mortality of an Antarctic fur seal in the longline fishery in 2007/08.

18. Interactions with cetaceans continue to be reported by observers in Subarea 48.3. There has been an increase in the percentage of sets affected by cetacean interactions from 15% in 2006/07 to 23% in 2007/08.

7. Ecosystem effects

19. The Working Group did not examine the ecosystem effects of the longline fishery for toothfish in Subarea 48.3.

8. Harvest controls and management advice

8.1 Conservation measures

20. The limits on the fishery for *D. eleginoides* in Subarea 48.3 are defined in Conservation Measure 41-02. The limits in force applying to 2007/08 and 2008/09 and the Working Group's advice to the Scientific Committee are summarised in Table 4.

Table 4: Limits on the fishery for *Dissostichus eleginoides* in Subarea 48.3 in 2007/08 and 2008/09 (Conservation Measure 41-02) and advice to the Scientific Committee.

| Element | Limits in force | Advice |
|--|---|---|
| Access (gear) | Longlines and pots only | Carry forward |
| Subdivision of Subarea 48.3 | Definition of area open to the fishery | Carry forward |
| Closure of other areas of Subarea 48.3 | Closure of fishing outside the area of the fishery | Carry forward |
| Catch limit | Catch limit for <i>D. eleginoides</i> was 3 920 tonnes for the subarea, applied as follows: Management Area A: 0 tonnes Management Area B: 1 176 tonnes Management Area C: 2 744 tonnes. | Carry forward |
| Season: | 1 May to 31 August | Carry forward |
| longline | Extension possible to 14 September for vessels complying fully with CM 25-02 in the previous season. | |
| pots | 1 December to 30 November | Carry forward |
| seabirds | During extension period (1–14 September) any vessel catching three (3) seabirds to cease fishing. | Carry forward |
| By-catch: | By-catch of crabs to be counted against crab catch limit. | Carry forward |
| crabs | | |
| finfish | Total combined catch of skates and rays 196 tonnes. Total catch of <i>Macrourus</i> spp. 196 tonnes. | Carry forward |
| any species | Move-on rule | Carry forward |
| Mitigation | In accordance with CM 25-02. | Carry forward |
| Observers | Each vessel to carry at least one CCAMLR scientific observer and may include one additional scientific observer. | Carry forward |
| Data | Five-day catch and effort reporting under CM 23-01. Haul-by-haul catch and effort data under CM 23-03. Biological data reported by the CCAMLR scientific observer. | Carry forward Carry forward Carry forward |
| Target species | For the purposes of CMs 23-01 and 23-04, <i>D. eleginoides</i> is the target species and the by-catch is any species other than <i>D. eleginoides</i> . | Carry forward |
| Jellymeat | Number and weight of <i>D. eleginoides</i> discarded, including those with jellymeat condition, to be reported. These catches count towards the catch limit. | Carry forward |
| Research fishing | Research fishing under CM 24-01 limited to 10 tonnes of <i>D. eleginoides</i> green weight and a single vessel in Management Area A. | Review |
| Environmental protection | Regulated by CM 26-01. | Carry forward |

8.2 Management advice

21. The Working Group recalled that the Commission had agreed that the catch limit for toothfish in Subarea 48.3 (SGSR stock) should be 3 920 tonnes in each season for the 2007/08 and 2008/09 fishing seasons (CCAMLR-XXVI, paragraph 13.54). No assessment was conducted this year and there is no change to the catch limit agreed for the 2008/09 season.