

NEW AND EXPLORATORY FISHERIES

New Fisheries in the 1996/97 Season

9.1 There were seven new fisheries operating in 1996/97 fishing season. Summary information on these is given in Table 7. Data received by the Secretariat in relation to these fisheries were summarised in Annex 5, Table 2.

9.2 Throughout this section, a split-year is the statistical reporting period which runs from 1 July in one year through to 30 June in the following year. Thus, for example, the 1997 split-year refers to the period from 1 July 1996 to 30 June 1997. Fishing seasons do not necessarily align with split-years, although catch data are frequently summarised by split-year. For new and exploratory fisheries, the fishing seasons are explicitly set out in individual conservation measures. Thus, the 1996/97 fishing season for *M. hyadesi* in Subarea 48.3 covers the period 2 November 1996 to 7 November 1997 (Conservation Measure 99/XV). In Table 7 below the reported catches correspond to those taken within the appropriate fishing seasons.

New Fishery for *M. hyadesi* in Subarea 48.3

9.3 A total catch of 81 tonnes was reported for the Republic of Korea/UK new fishery for *M. hyadesi* in Subarea 48.3. This was taken by a single vessel in 14 days during June/July 1997; fishing operations by this vessel for six days in January 1997 had failed to locate squid. The low effort expended in this fishery resulted largely from an unusually good and extended season for *Illex argentinus* in the southwest Atlantic (CCAMLR-XVI/21).

New Fisheries for *Dissostichus* spp. in Subarea 48.6 and Division 58.4.4

9.4 For administrative reasons, the new fisheries for *D. eleginoides* and *D. mawsoni* notified by South Africa for Subarea 48.6 and Division 58.4.4 did not take place.

New Fisheries for *Dissostichus* spp. in Subareas 58.6 and 58.7

9.5 A total of 2 521 tonnes of *D. eleginoides* were taken between October 1996 and 31 August 1997 in the new fisheries notified by South Africa for Subareas 58.6 and 58.7. This comprised 1 200 tonnes taken in the South African EEZ around Prince Edward Islands up to late January 1997 (CCAMLR-XVI/8 Rev. 1), a further 1 320 tonnes taken in the South African EEZ around Prince Edward Islands between 1 March and 31 August 1997, and around 400 kg taken outside the EEZ in Subareas 58.6. and 58.7. Approximately half the catches in the South African EEZ were taken in Subarea 58.6.

9.6 It was noted that, at least in respect of the fishery within the Prince Edward Islands EEZ, the results of the reported fishing operations had established that the fishery was commercially viable.

New Fisheries for *Dissostichus* spp.
in Subareas 88.1 and 88.2

9.7 For a number of reasons, fishing operations in the new fisheries for *D. eleginoides* and *D. mawsoni* notified by New Zealand for Subareas 88.1 and 88.2 did not commence until May 1997 (CCAMLR-XVI/17). Given the later start to fishing, extensive sea-ice coverage greatly restricted fishing operations. Only two sets were made, resulting in a total catch of 128 kg of *D. eleginoides*.

9.8 Dr D. Robertson (New Zealand) explained that, in relation to the information recorded in Annex 5, the total catch had actually been taken from Subarea 88.1, with no fishing having occurred in Subarea 88.2.

New Fisheries for *Dissostichus* spp. in Division 58.4.3

9.9 New fisheries had been notified in 1996 for *Dissostichus* spp. in Division 58.4.3 by Australia and South Africa. In the Australian fishery, bottom trawls were to be used; in the South African fishery, longlines were to be used.

9.10 For administrative reasons, no fishing was undertaken in Division 58.4.3 by South African vessels. Limited fishing by an Australian vessel on BANZARE and Elan Banks resulted in a catch of 7 kg of *D. eleginoides* on Elan Bank. A VMS trial was successfully carried out.

New Fishery for Deepwater Species in Division 58.5.2

9.11 No catches of the intended species were made in the new fishery for deepwater species not covered by Conservation Measure 109/XV and 110/XV, which was notified by Australia in Division 58.5.2. Australia currently has no interest in progressing further with this fishery.

New Fisheries Notified for 1997/98

9.12 A number of the notifications for new or exploratory fisheries in 1997/98 were for fisheries that had been new fisheries in 1996/97. In some cases, no fishing had taken place and new fisheries had been re-notified. In other cases, however, very small catches had been taken during 1996/97 and Members had taken different approaches to notifications for these fisheries in 1997/98; Australia submitted a notification for an exploratory fishery, while the New Zealand and UK/Republic of Korea notifications were for new fisheries. In these cases,

the Scientific Committee agreed to provide advice in relation to both Conservation Measures 31/X (for new fisheries) and 65/XII (for exploratory fisheries).

9.13 In several notifications for new and exploratory fisheries, it had not been specifically indicated that all the data collection and submission requirements of Conservation Measures 112/XV and 117/XV would be met. The Scientific Committee recommended that the data collection and submission requirements of these measures should be continued for both these conservation measures.

9.14 Experience gained in the South African new fisheries for *Dissostichus* spp. in Subareas 58.6 and 58.7 suggested that compliance with those aspects of Conservation Measure 112/XV relating to fine-scale rectangles was feasible, but only if very good positional information was available, such as from VMS.

New Fishery for *M. hyadesi* in Subarea 48.3

9.15 The UK and the Republic of Korea submitted a notification (CCAMLR-XVI/21) for a new fishery for *M. hyadesi* in Subarea 48.3. This fishery had been notified as a new fishery for 1996/97, however a very small catch (81 tonnes) was taken.

9.16 The proposal was for two vessels to operate, taking between 800 and 1 200 tonnes per vessel, with a maximum catch of 2 500 tonnes. An analysis of future prospects for the fishery is given in SC-CAMLR-XVI/BG/10. Biological information and potential effects on dependent species were discussed in detail by WG-FSA last year and these issues were further considered by WG-EMM (Annex 4, paragraphs 6.83 to 6.87).

9.17 An outline data collection plan for this fishery is given in Appendix E to Annex 5. Development of this plan is the only additional requirement should the fishery be classified by the Commission as an exploratory fishery, rather than a new fishery. The Scientific Committee agreed that the scientific observer required for the squid fishery in this plan should be appointed under the CCAMLR Scheme of International Scientific Observation.

9.18 The Scientific Committee recommended that the existing conservation measure for this fishery (Conservation Measure 99/XV) should be carried over for the coming 1997/98 season with a modification to include the appointment of CCAMLR observers (see paragraph 9.17). It would also be necessary for the Commission to decide whether this fishing should be classified as a new or exploratory fishery. If classified as an exploratory fishery, the appropriate data collection plan is specified in Appendix E to Annex 5.

New Fishery for *D. eleginoides* in Division 58.4.4

9.19 Ukraine submitted a notification (CCAMLR-XVI/6) for a new fishery for *D. eleginoides* in Division 58.4.4.

9.20 Very little information is available to CCAMLR about the abundance and status of fish stocks in this division. However, CCAMLR-XVI/6 reveals the existence of data from a long series of trawl surveys conducted by Ukraine since 1971. None of these data have yet been

submitted to CCAMLR, and the Scientific Committee recommended that Ukraine be requested to submit these data as soon as possible. Had these data been available in the CCAMLR database, the Scientific Committee believed that a thorough assessment of stock status similar to those undertaken in Subarea 48.3 and Division 58.4.2 could have been conducted and sound advice provided.

9.21 Dr Gubanov explained that the biomass estimates were based on by-catches of *D. eleginoides* (up to 2% of catches) in a trawl survey targeting primarily *L. squamifrons*. He noted that as the new fishery starts, more information on *D. eleginoides* will be forthcoming.

9.22 By-catches of *Bathyraja* spp., *M. whitsoni* and *M. marmoratus* are likely in this new fishery. Also, at shallower depths in the range proposed to be fished it is possible that *L. squamifrons* and *N. rossii* will be taken.

New Fisheries for *Dissostichus* spp. in Subarea 48.6 and Divisions 58.4.3 and 58.4.4

9.23 South Africa submitted a notification (CCAMLR-XVI/6) for new fisheries for *Dissostichus* spp. in Subarea 48.6 and Divisions 58.4.3 and 58.4.4. In 1996/97, there were new fisheries notified by South Africa for Subarea 48.6 and Division 58.4.4, but these were not fished. The South African notification addresses all the requirements of Conservation Measure 31/X and the points in SC-CAMLR-XV, paragraph 8.17.

9.24 The Scientific Committee observed that the notification for Division 58.4.4 is for a fishery in the same area as the Ukrainian notification discussed above. Australia has notified an exploratory trawl fishery for Division 58.4.3 in 1997/98.

9.25 Dr E. Marschoff (Argentina) noted that there was a potential overlap between the new fisheries in Divisions 58.4.3 and 58.4.4 and CEMP ISRS. It was noted that these ISRS were set up to study potential long-term impacts of krill fisheries on related and dependent species. At least in the short term, there appeared to be no problem with any overlap of these new fisheries with the ISRS.

New Fisheries for *Dissostichus* spp. in Subareas 88.1 and 88.2

9.26 New Zealand submitted a notification (CCAMLR-XVI/17) for new fisheries for *Dissostichus* spp. in Subareas 88.1 and 88.2. A very small catch (128 kg) was taken in Subarea 88.1 in a new fishery undertaken by New Zealand in 1996/97. No fishing was carried out in Subarea 88.2. The New Zealand notification addresses all the requirements of Conservation Measure 31/X and the points in SC-CAMLR-XV, paragraph 8.17.

9.27 It would be necessary for the Commission to decide whether this fishery should be classified as a new or exploratory fishery. If classified as an exploratory fishery, the appropriate data collection plan is given in Appendix E to Annex 5.

New Fishery for *D. eleginoides* in Subarea 48.6

9.28 Norway submitted a notification (CCAMLR-XVI/10) for a new fishery for *D. eleginoides* in Subarea 48.6. A new fishery had been notified by Norway for this subarea for 1996/97, but it was not fished.

9.29 As was the case with the notification submitted by Norway last year, WG-FSA had been unable to comment on the current notification, because of the lack of information provided. WG-FSA did query, however, the restriction of the notification to *D. eleginoides* only, since if fishing operations took place towards the southern part of Subarea 48.6, it is likely that *D. mawsoni* may also be taken.

9.30 Dr Øritsland apologised for the lack of detail provided in the notification. He provided the following supplementary information. The new fishery would be targeted at both *D. eleginoides* and *D. mawsoni*. There is no existing knowledge of the distribution, abundance or demography of either species in this subarea. One Norwegian flagged vessel (*Skarheim*) will participate in the fishery during the 1997/98 season. Fishing will be by Mustad longlines only. The planned fishing season is from 1 March to 31 August. The vessel will be fitted with VMS. Data will be collected and reported in full accordance with Conservation Measures 112/XV, 51/XII, 117/XV and 40/X. A CCAMLR scientific observer will be carried, if available, and all requirements of Conservation Measure 29/XV for mitigation of seabird mortality will be met. Plastic packaging bands will not be carried.

New Fisheries for *Dissostichus* spp. in Subareas 48.1, 48.2 and 88.3

9.31 Chile submitted a notification (CCAMLR-XVI/9) for new fisheries for *Dissostichus* spp. in Subareas 48.1, 48.2 and 88.3. This notification and comprehensive supplementary information was discussed at length by WG-FSA.

9.32 For Subareas 48.1 and 48.2, there are conservation measures in force that prohibit directed fishing for finfish, at least until such time as a survey of stock biomass has been carried out, its results have been analysed, and a decision to reopen the fishery has been made by the Commission based on the advice of the Scientific Committee (Conservation Measure 72/XII and 73/XII). These had been imposed because of concerns about the status of finfish species vulnerable to capture in trawl fisheries in relatively shallow waters. The new fishery proposal was for longlining in deeper waters using the Spanish system. Examination of by-catches by longliners fishing for *D. eleginoides* in Subarea 48.3 suggested that if the Spanish system is used and longlining is restricted to depths greater than 600 m, it is unlikely that there would be any threat to the species of concern in these conservation measures.

9.33 Although the limited information available to the Scientific Committee suggests that the by-catch rates of the most likely by-catch species (skates and *Macrourus* spp.) are likely to be low, the Scientific Committee urged that an additional by-catch provision similar to that in Conservation Measures 109/XV, 110/XV and 111/XV be adopted, under which vessels move to another fishing location if the by-catch of species other than *D. eleginoides* or *D. mawsoni* in any one longline set exceeds 5%, subject to the modification suggested in CCAMLR-XVI/12 (see Annex 5, paragraphs 4.43 to 4.46).

9.34 The principal concern raised by Members regarding Subareas 48.1 and 48.2 was that the little information that existed from past scientific surveys suggested that the abundance of *D. eleginoides* and *D. mawsoni* in these areas may be very low. In this context, attention was drawn to the very low abundances of juvenile *D. mawsoni* in research surveys in these areas, in comparison with juvenile abundance estimates for *D. eleginoides* from surveys in Subarea 48.3, although it was noted that *D. mawsoni* may be more pelagic in its habits (WG-FSA-97/19 and 20), thus making it less vulnerable to capture in a bottom trawl survey.

9.35 Dr Holt observed that the approach planned by Chile, which involved first conducting a longline survey using one vessel and using the results of this to decide whether to proceed with further fishing was a very useful one. In view of the existing conservation measures and the likely low abundance of *Dissostichus* in the region, he would prefer that the results of the longline survey be reported to and discussed by the Scientific Committee before commercial fishing activities were undertaken.

9.36 Prof. Moreno noted that Conservation Measure 31/X (new fisheries) does not specify a requirement for an initial survey, followed by an analysis of the data during the next WG-FSA meeting, as a condition for the continuance of a new fishery proposal.

9.37 Prof. P. Arana (Chile) stated that the first stage of the proposed new fishery by Chile, which involves conduct of an initial survey, will guarantee that no fishing will take place in those areas where low abundances of *Dissostichus* spp. are found.

New Fisheries for *D. eleginoides*
in Subareas 48.1, 48.2 and 48.4

9.38 Uruguay had submitted a preliminary notification by letter for new fisheries for *D. eleginoides* in Subareas 48.1, 48.2 and 48.4. This was discussed briefly by WG-FSA (Annex 5, paragraphs 4.53 to 4.58). During the Scientific Committee meeting, it was clarified by Uruguay that this had been a notice of intent only, and that no fishing will be carried out during the coming season.

New Fisheries for *Dissostichus* spp. in Divisions 58.4.4,
58.5.1, 58.5.2 and Subareas 58.6 and 58.7

9.39 The Scientific Committee noted that the proposal by France for exploratory fisheries in Divisions 58.4.4, 58.5.1 and 58.5.2 and Subareas 58.6 and 58.7 (outside EEZs) had arrived too late to be considered by WG-FSA. The Scientific Committee therefore agreed that these proposals could not be considered this year; they should be resubmitted (with full documentation) for evaluation at next year's meeting of WG-FSA.

Exploratory Fisheries Notified for 1997/98

9.40 One of the requirements of Conservation Measure 65/XII is that the Scientific Committee shall develop a data collection plan for each exploratory fishery. Outline data

collection plans suitable for longline fisheries and for trawl fisheries for *Dissostichus* spp. and for jig fisheries for squid were developed by WG-FSA and they are given in Appendix E of Annex 5. These were accepted by the Scientific Committee (see also paragraph 9.17).

9.41 The Scientific Committee noted that in the preamble to Conservation Measure 65/XII, the Commission had agreed that exploratory fishing should not be allowed to expand faster than the acquisition of information necessary to ensure that the fishery can and will be conducted in accordance with the principles set forth in Article II. A vital element in ensuring this is the ability of the Scientific Committee to conduct stock assessments. For *Dissostichus* spp., the assessment methods available to the Scientific Committee all require research survey estimates of biomasses. The Scientific Committee agreed that the conducting of research surveys would be an essential element of the development of exploratory fisheries. In this context, the Scientific Committee welcomed the inclusion of plans for the early conduct of research surveys in the notifications by South Africa and Australia.

Exploratory Fishery for *Dissostichus* spp.
in Division 58.4.3

9.42 Australia submitted a notification by letter (received 19 September 1997) for an exploratory fishery for *Dissostichus* spp. in Division 58.4.3. A new fishery had been notified for this division by Australia for 1996/97; only 7 kg of *D. eleginoides* had been taken.

9.43 The Scientific Committee noted the detailed research and data collection plan for this fishery given in WG-FSA-97/31. Random stratified trawl surveys are planned for both BANZARE and Elan Banks, though surveys of both banks will not necessarily be completed in the first year. When these surveys have been completed, it should be possible for the Working Group to conduct stock assessments using the methods employed currently for Subarea 48.3 and Division 58.5.2.

Exploratory Fisheries for *Dissostichus* spp.
in Subareas 58.6 and 58.7 outside EEZs

9.44 Notifications have been submitted for exploratory fisheries for *Dissostichus* spp. in Subareas 58.6 and 58.7 outside EEZs by South Africa (CCAMLR-XVI/8), Ukraine (CCAMLR-XVI/6) and Russia (by letter, received 20 August 1997).

9.45 A new fishery had been notified for these subareas by South Africa for 1996/97. A total of 2 521 tonnes of *D. eleginoides* had been taken by 31 August 1997, almost all within the EEZ around Prince Edward Islands. In addition, very large unreported catches were estimated to have been taken in these subareas. The notification by South Africa is intended to cover longline fishing only outside the Prince Edward Islands EEZ.

9.46 The Scientific Committee noted the detailed research, data collection and fishing plans tabled in CCAMLR-XVI/8 Rev. 1. It welcomed the fact that the research plan also envisages that a research survey will be completed in the two subareas within the first two years. This should enable the Working Group to conduct stock assessments using the methods employed currently for Subarea 48.3 and Division 58.5.2.

9.47 Practical experience gained with application of the 100-tonne fine-scale rectangle catch limit indicated there were some problems in its application. Consideration should be given to some relaxation of this limit in appropriate areas.

9.48 The original Ukrainian notification (CCAMLR-XVI/6) was for a new fishery, but on the advice of the Secretariat it has been treated here as for an exploratory fishery. There was insufficient information provided to allow the Scientific Committee to evaluate what was intended.

9.49 Dr Gubanov commented that the additional information needed could be supplied. He expressed concern, however, that if insufficient information is supplied, the conduct of a legal fishery in an area where there is very substantial unregulated fishing may be jeopardised.

9.50 The information provided in the Russian letter of notification was also insufficient for the Working Group to comment. Dr Shust apologised for the lack of information and provided the following. One longline vessel would participate, with a planned catch of around 700 tonnes. A CCAMLR scientific observer will be carried, and all conservation measures governing data collection and submission will be strictly adhered to, as will the measures relating to mitigation of incidental mortality. The data collection plan (Appendix E, Annex 5) will be followed as far as possible. The vessel is new, and he was unsure whether it was equipped with a VMS.

9.51 In Subareas 58.6 and 58.7, the Scientific Committee was concerned that there have been three new or exploratory fishing operations notified outside EEZs (South Africa, Ukraine and Russia). It is vital that there be very careful planning to ensure that all the appropriate data are collected and reported in a timely manner. It is also vital that fishing plans be coordinated in order to ensure that fishing effort is widely distributed, both spatially and throughout the year. In this respect it is essential that all participating vessels have accurate position fixing equipment fitted (such as VMS) and that the data reporting protocols are adequate.

9.52 The view was also expressed that it may be appropriate to impose restrictions on the total fishing effort to be expended in these subareas. In this context, Prof. G. Duhamel (France) advised that in the Crozet EEZ, only one vessel will be authorised to fish, and that very limited fishing effort is foreseen spatially and throughout the year.

Precautionary Catch Levels for New and Exploratory Fishing

9.53 Last year, WG-FSA had agreed that a conservative approach to advising on precautionary catch limits for new fisheries would be to extrapolate from estimated yields for *D. eleginoides* in Subarea 48.3 and Division 58.5.2 in a manner that is discounted to take implicit account of incomplete knowledge of previously unexploited areas and/or adjusted for the relative areas of fishable seabed (SC-CAMLR-XV, Annex 5, paragraph 4.28). However, in the absence of available data on seabed areas, it had been unable to complete these calculations.

9.54 During this year's meeting, the Secretariat calculated, for each subarea and division, the seabed areas in three depth ranges: 0 to 600 m (possibly representative of juvenile

habitat), 600 to 1 800 m (longline fishing depths) and 500 to 1 500 m (trawl fishing depths). These calculations used Sandwell-Smith global sea floor topography data and computer programs (SC-CAMLR-XVI/BG/17).

9.55 Because this dataset is sparse in high latitude areas, estimates were only calculated for seabed areas in the nominated depth ranges north of 70°S. WG-FSA had agreed that this may result in a considerable underestimation of seabed area if there are substantial areas of shallow water in high latitudes. For instance, the degree of underestimation may be quite large in Subareas 88.1 and 88.2 (Ross Sea) and in a lesser measure in Subarea 88.3. Also, it is likely that seabed areas in regions with large numbers of isolated seamounts are underestimated.

9.56 During the Scientific Committee review of the seabed area calculations performed by WG-FSA, New Zealand tabled a document that contained alternative calculations of seabed areas for Subareas 88.1 and 88.2, including the areas south of 70°S, which used the GEBCO standard International Hydrographic Organisation (IHO) bathymetry data. A summary prepared at the Scientific Committee's request by the rapporteur is given in paragraph 9.57 below.

9.57 The New Zealand document reported calculations which resulted in estimated seabed areas between 600 and 1800 m of 238 011 km² for Subarea 88.1 and 191 470 km² for Subarea 88.2. The seabed areas calculated by WG-FSA for the two subareas were 82 322 and 3 288 km² respectively. If these revised seabed areas were used, very much higher catch limits would have resulted than those calculated by WG-FSA (see Table 5). The New Zealand document concluded that it did not propose that tonnages as high as those derived from the corrected seabed calculations should necessarily apply, and suggested that precautionary catch limits for *Dissostichus* spp. should be combined within each of these two subareas, perhaps after use of an appropriate discount factor.

9.58 The Scientific Committee agreed that this submission had been received too late for it to be considered properly. It therefore agreed that it should pass on the information contained in paragraph 9.57 to the Commission without further comment. It recommended, however, that in the intersessional period, the Secretariat should undertake a comparative analysis of seabed areas calculated using the Sandwell-Smith and GEBCO data (including areas north of 70°S), and that WG-FSA should consider this at its next meeting. It also recommended that, should other Members know of other useful bathymetric data, these should be submitted to CCAMLR well in advance of the next WG-FSA meeting.

9.59 In relation to Subareas 58.6 and 58.7, Mr L. Jordaan (South Africa) observed that areas to the immediate north of the CCAMLR boundary had also been left out of the calculations (Annex 5, paragraph 4.97). He noted that economically viable catches had been taken to the north of the CCAMLR boundary, both inside and outside of the Prince Edward Islands EEZ. Adult fish had also been taken in depths less than 600 m in these subareas. Mr Jordaan further commented on the possible impact of this on stock assessments.

9.60 The method used by WG-FSA to calculate possible precautionary catch limits for *D. eleginoides* and *D. mawsoni* is detailed in paragraphs 4.99 to 4.105 of Annex 5. In brief, the method involved the following elements:

- (i) proportional adjustments for areas of fishable seabed (between 600 and 1 800 m for longline fisheries, between 500 and 1 500 m for trawl fisheries) and for the latitudinal zones in which the two species were believed to be found;
- (ii) calculations using the GYM with biological and fishery parameters set at the values most appropriate for the area under consideration;
- (iii) allowances were made for the recent catch history, including estimated unreported catches; and
- (iv) yield levels calculated in this way were then multiplied by 0.45 for *D. eleginoides* and 0.3 for *D. mawsoni*.

9.61 The resulting estimates are given in Table 5. WG-FSA had then recommended that, with the exception of *D. eleginoides* in Subarea 48.4, for which a catch limit of 28 tonnes should apply (see Annex 5, paragraph 4.123), the precautionary catch limits in Table 5 should be applied for new and exploratory fisheries. Comments relating to existing conservation measures for Subareas 48.1 and 48.2 are given in paragraphs 9.32 and 9.33. Additional comments are given in relation to new fisheries in Subareas 48.1 and 48.2 (paragraphs 9.34 and 9.36).

9.62 In a number of cases, the calculated precautionary catch limits in a subarea for either *D. eleginoides* or *D. mawsoni* shown in Table 5 were zero or very low. The Scientific Committee agreed with the conclusion of WG-FSA that it would be quite inappropriate to insist, for example, that a new fishery should cease if a zero or low precautionary catch limit on one species was inadvertently exceeded. Rather, it recommended that some flexibility be applied, perhaps by allowing a limited proportion of the catch limit for each *Dissostichus* spp. to be transferred between *D. eleginoides* and *D. mawsoni* if necessary.

9.63 At the time of adoption of the report, Dr Gubanov believed that the catch limit of 580 tonnes for *D. eleginoides* in Division 58.4.4 (Table 5) was not sufficiently justified as compared with the limit of 1 980 tonnes in the 1996/97 season.

9.64 Other Members responded that at last year's meeting WG-FSA and the Scientific Committee had been unable to take account of the area of seabed of the appropriate depths when calculating the limit of 1 980 tonnes. This year's calculations take this into account as well as the estimates of unreported catches (see paragraph 9.60).

9.65 The Scientific Committee agreed with the view of WG-FSA that the calculation method used was, scientifically, the best available given the existing information, and that it was essentially the method it had wanted to use last year, but had been unable to because of the lack of estimates of areas of fishable seabed.

9.66 However, it wished to emphasise that there were a number of important intrinsic uncertainties in the procedure that meant the results must be interpreted with considerable caution.

- (i) First, as was noted last year (SC-CAMLR-XV, Annex 5, paragraph 4.30), the values calculated for precautionary limits should not be taken to imply that such quantities of fish would actually be available for capture.

- (ii) The calculation procedure relies explicitly on extrapolation from assessments of existing fisheries for *D. eleginoides*. In particular, it makes the assumption that the recruitment rate per unit area of fishable seabed is the same across all areas. In some areas (e.g. Crozet) the approach has produced precautionary catch limits that were consistent with independent information on yield levels, but in most areas there are no data with which to test the accuracy of this assumption.
- (iii) There is much greater uncertainty associated with the calculations for *D. mawsoni*, a species about which very little at all is known. This is reflected in part in the greater discount factor used for uncertainty (0.3), but it must be emphasised that this factor and the 0.45 factor for *D. eleginoides* (CCAMLR-XV, paragraph 8.17) used in the calculations are arbitrary. The appropriate degree of precaution to apply is seen as a matter on which the Commission must decide.

9.67 There were differences of opinion amongst Scientific Committee Members as to the extent to which these uncertainties cast doubt on the usefulness of the calculations for setting precautionary catch limits for new and exploratory fisheries.

9.68 Some Members believed that the lack of knowledge about some areas, and especially about *D. mawsoni*, was such that the Commission may wish to consider use of alternative methods for regulating new and exploratory fisheries. One such alternative method was first to require a survey or very limited fishing to be carried out in areas notified for new or exploratory fisheries and for the results to be reported and considered by CCAMLR before any commercial fishery commenced. Such a method has been used previously, for example, for *D. eleginoides* in the South Sandwich Islands (Subarea 48.4).

9.69 Other Members, while acknowledging the great value of fishery independent survey data, and their key role in the early stages of development of exploratory fisheries as already noted, believed there was a great danger in application of an alternative uniform approach that ignored the different amounts of information available for different areas. For some areas there is indeed no past history of fishing (regulated or unregulated) and little knowledge, but in others there has been well documented extensive unregulated fishing and other information available which should not be ignored. The calculation method used, while imperfect and to some extent arbitrary, did take account of existing information, including estimates of unregulated catches. The Commission could, of course, set different discount factors to those used in the calculations if it desired.

9.70 A further advantage cited for setting precautionary catch limits compatible with a regulated commercial catch for those areas with currently large unregulated catches is that the presence of legal new fishery operations will mean at least some fishery information is forthcoming to CCAMLR.

9.71 It was not possible to consider these issues at greater depth during this meeting. The Scientific Committee agreed that the range of views should be passed on to the Commission.

General Comments

9.72 The large number of notifications for new and exploratory fisheries for 1997/98, along with the need to review the results of new fisheries notified for 1996/97, meant that a large part of the time available to WG-FSA and to the Scientific Committee was devoted to discussing this topic.

9.73 The Scientific Committee was disappointed by the large variation in the amount of information contained in the notifications. In many cases, there was insufficient information to develop useful advice and in some cases the notifications referred to data and analyses not available to the Scientific Committee.

9.74 The Scientific Committee noted the experience in several fisheries that compliance with Conservation Measure 112/XV requires each vessel to have very accurate positioning information, which in each case, would require the installation of a VMS on each vessel.

Avoiding Incidental Mortality in New and Exploratory Fisheries

9.75 The Scientific Committee then examined the proposals for new and exploratory longline fisheries in relation to the management advice provided in respect of avoiding incidental mortality of seabirds (Annex 5, paragraphs 7.118 to 7.131, 7.148(xv); see also paragraph 4.62).

9.76 Table 8 summarises the main information of relevance. This indicates that:

- (i) there is no difference between the advice in respect of avoiding seabird by-catch and the proposals for longline fishing seasons and operations for Subareas 48.4, 48.6, 88.1, 88.2 and 88.3; and
- (ii) for Subareas 48.1 and 48.2, there is a one-month overlap (October) between the suggested restriction to the longline fishing season to protect seabirds from risk of by-catch and the duration of longline fishing indicated in the proposals for the new fisheries.

9.77 Some concern was raised in respect of Subareas 48.6, 88.1, 88.2 and 88.3, that although no restriction of fishing season had been proposed in relation to avoiding the main breeding season of albatrosses and petrels, the recommendation to retain Conservation Measure 29/XV effectively imposed some restriction due to the limited hours of darkness available for fishing in the southern part of these areas at certain times of year.

9.78 The original assessments for these areas had noted that they are poorly known and that the potential for seabird–fishery interactions was probably underestimated in the assessments. The application of Conservation Measure 29/XV was recommended principally as a precautionary measure until better data are available. In fact, the fishing seasons proposed by Chile, New Zealand, Norway and South Africa largely took account of this; it was confirmed that they would all be complying with all aspects of Conservation Measure 29/XV.

9.79 South Africa and Norway proposed that the season south of 60°S in Subarea 48.6 should be extended to run from 15 February to 31 October, approximately in line with the season in other areas in high latitudes (i.e. Subareas 48.1, 88.1, 88.2 and 88.3).

9.80 It was noted that the use of new devices to avoid incidental mortality of seabirds, such as setting longlines underwater, may in future enable vessels to avoid restrictions to fishing seasons and also restrictions imposed by Conservation Measure 29/XV (see also paragraph 4.67).

9.81 The main difficulties in reconciling advice on seabird by-catch with the new and exploratory fishing proposals relate to the subareas and divisions of Area 58.

9.82 In Division 58.4.3 and for South Africa in Division 58.4.4, the only discrepancies were the planned commencement of fishing on 1 March, as opposed to the recommendation of 1 May in respect of avoiding seabird by-catch (see paragraph 4.61).

9.83 The proposals for summer longline fishing by Ukraine in Division 58.4.4 and Subareas 58.6 and 58.7, for year-round longline fishing by South Africa in Subareas 58.6 and 58.7 and for December–June longline fishing by Russia in Subareas 58.6 and 58.7 are not in accordance with the recommendation of WG-FSA that, from the perspective of achieving a significant reduction in seabird by-catch in these subareas by vessels operating within the CCAMLR regulations, longline fishing should not be undertaken between 1 September and 1 May (Annex 5, paragraphs 7.126(vi), (viii) and (ix) and 7.148(xxi)).

9.84 These differences and potential difficulties were drawn to the attention of the Commission, together with reference to paragraph 9.80 above and to comments relating to discouraging unregulated fisheries (Annex 5, paragraphs 4.84 and 7.128).

9.85 Concern was raised that several fisheries (Chile in Subareas 48.1, 48.2 and 88.3; South Africa and Norway in Subarea 48.6, south of 60°S) were continuing to the end of October. This meant that data for the last month or two of these fisheries would be unavailable for assessment and evaluation by WG-FSA.

9.86 It was agreed that in order to facilitate the work of WG-FSA all Members undertaking these fisheries would ensure that all data acquired to the end of the split-year (end of June) would be submitted to the Secretariat as soon as possible.

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9.87 In several notifications for new and exploratory fisheries, it had not been specifically indicated that all the data collection and submission requirements of Conservation Measures 112/XV and 117/XV would be met. The Scientific Committee recommended that the data collection and submission requirements of these measures should be continued for both these conservation measures.

9.88 The Scientific Committee recommended that the existing conservation measure for the *M. hyadesi* fishery in Subarea 48.3 (Conservation Measure 99/XV) should be carried over for the coming 1997/98 season, however with a modification to include the appointment of CCAMLR scientific observers (see paragraph 9.17). It would also be necessary for the

Commission to decide whether this fishery should be classified as a new or exploratory fishery. If classified as an exploratory fishery, the appropriate data collection plan is specified in Appendix E to Annex 5.

9.89 The Scientific Committee recommended that Ukraine be requested to submit historical trawl survey data for Division 58.4.4 as soon as possible.

9.90 For *Dissostichus* spp., the assessment methods available to the Scientific Committee all require research survey estimates of biomasses. The Scientific Committee agreed that the conducting of research surveys would be an essential element of the development of exploratory fisheries.

9.91 Practical experience gained with application of the 100-tonne fine-scale rectangle catch limit indicated there were some problems in its application. Consideration should be given to some relaxation of this limit in appropriate areas.

9.92 Fishable seabed area calculations for areas north of 70°S have been carried out this year as part of the process of developing advice on precautionary catch limits (paragraphs 9.54 and 9.55). The possible biasing effects of ignoring higher latitude waters were recognised, but the Commission's attention is drawn to further comments in relation to Subareas 88.1 and 88.2 by New Zealand (paragraphs 9.56 to 9.58). Other comments on seabed area calculations for Subareas 58.6 and 58.7 are in paragraph 9.59.

9.93 Precautionary catch limits calculated using the scientifically best available method are shown in Table 5. However, there are a number of important intrinsic uncertainties in the procedure that meant the results must be interpreted with considerable caution.

- (i) First, as was noted last year (SC-CAMLR-XV, Annex 5, paragraph 4.30), the values calculated for precautionary limits should not be taken to imply that such quantities of fish would actually be available for capture.
- (ii) The calculation procedure relies explicitly on extrapolation from existing assessments of currently operating fisheries for *D. eleginoides*. In particular, it makes the assumption that the recruitment rate per unit area of fishable seabed is the same across all areas. In some areas (e.g. Crozet) the approach has produced precautionary catch limits that were consistent with independent information of yield levels, but in most areas there are no data with which to test the accuracy of this assumption.
- (iii) There is much greater uncertainty associated with the calculations for *D. mawsoni*, a species about which very little at all is known. This is reflected in part in the greater discount factor used for uncertainty (0.3), but it must be emphasised that this factor and the 0.45 factor for *D. eleginoides* used by the Commission in 1996 are arbitrary. The appropriate degree of precaution to apply is seen as a matter on which the Commission must decide.

9.94 Some Members believed that the lack of knowledge about some areas, and especially about *D. mawsoni*, was such that the Commission may wish to consider use of alternative methods for regulating new and exploratory fisheries. One such alternative method was first to require a research survey or very limited fishing to be carried out in areas notified for new

or exploratory fisheries and for the results to be reported and considered by CCAMLR before any commercial fishery commenced. Such a method has been used previously, for example, for *D. eleginoides* in the South Sandwich Islands (Subarea 48.4).

9.95 Other Members, while acknowledging the great value of fishery independent survey data, and their key role in the early stages of development of exploratory fisheries as already noted, believed there was a great danger in application of an alternative uniform approach that ignored the different amounts of information available for different areas. For some areas there is indeed no past history of fishing (regulated or unregulated) and little knowledge, but in others there has been well documented extensive unregulated fishing and other information available which should not be ignored. The calculation method used, while imperfect and to some extent arbitrary, did take account of existing information, including estimates of unregulated catches. The Commission could, of course, set different discount factors to those used in the calculations if it desired.

9.96 A further advantage cited for setting precautionary catch limits compatible with a regulated commercial catch for those areas with currently large unregulated catches is that the presence of legal new fishery operations will mean at least some fishery information is forthcoming to CCAMLR.

9.97 In a number of cases, the calculated precautionary catch limits in a subarea for either *D. eleginoides* or *D. mawsoni* shown in Table 5 were zero or very low. The Scientific Committee agreed with the conclusion of WG-FSA that it would be quite inappropriate to insist, for example, that a new fishery should cease if a zero or low precautionary catch limit on one species was inadvertently exceeded. Rather, it recommended that some flexibility be applied, perhaps by allowing a limited proportion of the catch limit to be transferred between *D. eleginoides* and *D. mawsoni* if necessary.

9.98 In relation to reconciling potential management measures for seabird by-catch with fishing operation in relation to new and exploratory longline fisheries, Table 8 summarises the main information of relevance. This indicates that:

- (i) there is no difference between the advice in respect of avoiding seabird by-catch and the proposals for longline fishing seasons and operations for Subareas 48.4, 48.6, 88.1, 88.2 and 88.3;
- (ii) for Subareas 48.1 and 48.2, there is a one-month overlap (October) between the suggested restriction to the longline fishing season to protect seabirds from risk of by-catch and the duration of longline fishing indicated in the proposals for the new fisheries;
- (iii) in Division 58.4.3 and for South Africa in Division 58.4.4, the only discrepancies are the planned commencement of fishing on 1 March, as opposed to the recommendation of 1 May in respect of avoiding seabird by-catch (see paragraph 4.61); and
- (iv) the proposals for summer longline fishing by Ukraine in Division 58.4.4 and Subareas 58.6 and 58.7, for year-round longline fishing by South Africa in Subareas 58.6 and 58.7 and for December to June longline fishing by Russia in Subareas 58.6 and 58.7 are not in accordance with the recommendation of

WG-FSA that, from the perspective of achieving a significant reduction in seabird by-catch in these subareas by vessels operating within the CCAMLR regulations, longline fishing should not be undertaken between 1 September and 1 May (Annex 5, paragraphs 7.126(vi), (viii) and (ix) and 7.148(xxi)).

9.99 It was re-emphasised that the advice in paragraph 9.98 above, also endorsed by the Scientific Committee in paragraph 4.61, does not take into account other potential considerations, such as fishery operational considerations and measures to combat unregulated fishing (Annex 5, paragraph 7.128).

9.100 It was noted that the use of new devices to avoid incidental mortality of seabirds, such as setting longlines underwater, may in future enable vessels to avoid restrictions to fishing seasons and also restrictions imposed by Conservation Measure 29/XV (see also paragraph 4.67).

9.101 It was agreed that in order to facilitate the work of WG-FSA all Members undertaking longline fisheries continuing until October would ensure that all data acquired to the end of the split-year (end of June) would be submitted to the Secretariat as soon as possible (paragraph 9.86).

9.102 Concern was raised that several fisheries (Chile in Subareas 48.1, 48.2 and 88.3; South Africa in Subarea 48.6, south of 60°S) were continuing to the end of October. This meant that data for the last month or two of these fisheries would be unavailable for assessment and evaluation by WG-FSA (paragraph 9.85).