

MANAGEMENT UNDER CONDITIONS OF UNCERTAINTY  
ABOUT STOCK SIZE AND SUSTAINABLE YIELD

Lapsed Fisheries

7.1 The Scientific Committee has been requested to develop a formal procedure for dealing with lapsed fisheries (CCAMLR-XV, paragraph 9.6), especially concerning the conditions for reopening such fisheries.

7.2 A registry of fisheries in the CCAMLR Convention Area is contained in SC-CAMLR-XVI/BG/16 Rev. 2. There are no specific guidelines for which fisheries should be regarded as lapsed, but a number of fisheries were considered in this document to fall within this category. Some additions were made during the Scientific Committee meeting, and a consolidated list is in Table 6.

7.3 The Scientific Committee stressed that lapsed fisheries should be reopened according to precautionary principles. Resumption of such fisheries should involve prior notification and a data collection plan similar to those required for exploratory fisheries as developed at WG-FSA-97 and detailed in Appendix E of Annex 5.

7.4 The Scientific Committee considered that one potential approach to defining a fishery as lapsed is to consider the time period since the last commercial fishing activity, and the level of information about the current status of the resource. For some fisheries, this information level is proportional to the time since commercial fishing last took place. For others, there are non-commercial sources of information, such as research surveys. In all cases, the rate at which information becomes less relevant depends partly on the biology of the species in question, and in particular on the rate of turnover of the stock. Such stock-specific characteristics emphasise the merit of deciding on a case-by-case basis whether a fishery has lapsed.

7.5 The Scientific Committee considered examples of fisheries in the Convention Area which could be considered as lapsed.

- (i) The fisheries for *P. antarcticum*, *C. wilsoni* and *T. eulepidotus* in Division 58.4.2 have never been assessed by WG-FSA. Given the time period since commercial catches were last taken (1990) the Scientific Committee considered that these fisheries should be classified as lapsed. In general, it would be appropriate to define such fisheries as lapsed after a simple time period since catches were last reported (say three or five years).
- (ii) The fishery for *E. carlsbergi* in Subarea 48.3 has previously been formally assessed and management advice has been provided to the Commission. There has been no commercial catch in this fishery since 1992. At the time of the last assessment, a precautionary catch limit was adopted, which takes uncertainty into account and remains applicable until such time as the fishery is reassessed. If the fishery is resumed the collection of data required to update the assessment, including the undertaking of a survey (Conservation Measure 103/XV), is a high priority.

## Long-term Management Strategy for *C. gunnari*

7.6 In 1997 WG-FSA began to develop methods for a long-term management strategy for *C. gunnari*, as requested by the Commission. The Commission's current decision rules on determining long-term yield cannot be applied because of the large natural variations in spawning stock biomass. This problem is dealt with fully in paragraphs 5.58 to 5.65 of this report.

## Feedback Management for *D. eleginoides*

7.7 The Commission at its last meeting (CCAMLR-XV, paragraph 9.8) expressed concern that the abundance of the total *D. eleginoides* stock cannot be directly assessed from estimates of abundance of young fish by trawl surveys, as is current practice. WG-FSA and the Scientific Committee are aware of the need to be able to monitor the status of the total stock over the longer term, but as yet little progress has been made.

7.8 This problem is highlighted in the *D. eleginoides* fishery in Subarea 48.3. Here the predicted trend over a number of years in the spawning stock biomass from the GYM, and the trend in standardised CPUE derived with the GLM appears to be in conflict (paragraph 5.55). Further work is necessary to develop methods to take into account more than one indicator of the status of the stock, particularly when they are different.

7.9 Another major problem of managing under uncertainty is in the new and exploratory fisheries for *D. eleginoides*, where a lack of local data requires that information has to be extrapolated from other areas (paragraphs 9.53 to 9.71). A major problem is the lack of fisheries-independent data. For example, trawl surveys to assess stock biomass are required in each area to provide direct estimates of recruitment for use in assessments using current methodology. Other problems arise from having a high level of unreported catches compared to reported catches in some areas, which introduces a high degree of uncertainty about the status of the fish stocks.

7.10 Dr Øritsland informed the Scientific Committee about a symposium on 'Objectives and uncertainties in fisheries management with emphasis on three North Atlantic ecosystems' held in Bergen, Norway, from 2 to 5 June 1997 (SC-CAMLR-XVI/BG/8). The Scientific Committee welcomed this development and looked forward to the results being published in a special issue of *Fisheries Research*. They will be a useful addition to the Scientific Committee's deliberations on managing under uncertainty.