Northwest Atlantic Fisheries Organization

Serial No. N4514 **NAFO SCR Doc. 01/169**

SCIENTIFIC COUNCIL MEETING – NOVEMBER 2001

Growth of Shrimp at the Flemish Cap 2000-2001

by

Jón Kristjánsson

Fiski- Fisheries Management, Reykjavík Iceland.
e-mail: jon@fiski.com - URL: http://www.fiski.com

Abstract

Growth rate of shrimp at the Flemish Cap improved in 2001, which is a reversal of the gradual growth reduction observed from 1995 to 2000. This reflects improved conditions for the individual shrimp, which may stem from a general improvement in feeding conditions or lower population numbers. This is expected to be reflected in improved catch rates and lower average counts of shrimp caught in 2001.

Introduction

The shrimp fishery at Flemish Cap started in 1993 when 28.000 tons were caught. From 1994- 1998 the yearly average was some 32.000 tons with a peak of 48.000 tons in 1996. The catch in 1999 was 42.000 tons and increased to around 50.000 tons in 2000 (Anon 2000). Skuladottir *et. al.* (1999 a) gave an overview of the international fishery for shrimp at Flemish Cap.

Since 1995, there has been a gradual reduction in the growth rate of shrimp at the Flemish Cap, with size-at-age reaching a minimum in 2000 (Kristjánsson 2001). A research trip was conducted in the spring of 2001 to investigate the state of the stock.

Material and Methods

Samples were collected on board an Estonian shrimp trawler during commercial fishing from 26 March to 2 April 2001, in the NW- area of the Flemish Cap.

The samples were taken unselected from the bunker. The oblique carapace length of shrimp (OCL) was measured to the nearest 0.1 mm, sorted into 0.5 mm length classes and separated into sex categories, i.e. males, transitionals, and females.

Results

Figure 1 A shows the length-frequency distribution of shrimp by gender at the Flemish Cap in March- April 2001. For comparison the size distribution of shrimp by gender in March- April 2000 is shown in Fig 1 B.

The median of the main group of males was at 20 mm in 2001, compared to 17 mm a year earlier. Males in 2001 grow larger than in 2000 before they change sex, which is a sign of improved conditions for growth (Kristjánsson 2001).

Primiparous females, females spawning for the first time, were on the average 2 mm larger in 2001 than they were in 2000. This is also a sign of increased growth rate and better conditions for the individual shrimp.

The catch rate was good, averaging some 500 kg/hour for one trawl.

Discussion

After a long period of decline, growth rate is now increasing; indicating improved feeding conditions for individual shrimps. This could either stem from a general improvement in feeding conditions or lower population numbers. As no reduction in catch rates in the commercial fishery have been observed, a possible reduction in number would be at the "small end" of the stock, that is the two youngest year classes, which are generally not caught by the commercial fleet. Small shrimp occupy the shallower areas of the Flemish Cap, thus it is relatively easy to avoid them, except in March when female shrimp migrate to the shallow areas to release their larvae and to moult.

Overall, the stock biomass is expanding and the catches in 2001 will reflect this and the total catch increase this year if the effort remains unchanged.

References

Anon. 2000. Report of the Scientific Council Meeting November 2000 SCD Doc. 00/27, Serial No. N4345.

Skuladottir U., D.G. Parsons and D. Orr 1999. The International Fishery for Shrimp (*Pandalus borealis*) in Division 3M (Flemish Cap), 1993-1999. NAFO SCR Doc. 9/112 Serial No. N4192. 21p.

Kristjánsson J. 2001. Changes in Population Structure of the Shrimp (*Pandalus borealis*) Stock at Flemish Cap 1995-2000. (in Prep).

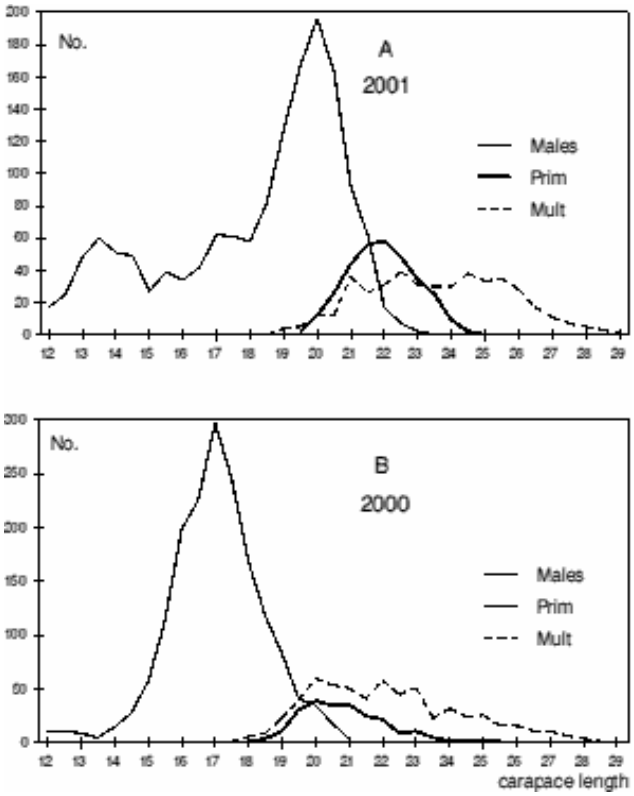

Fig. 1. Length- frequency distribution of shrimp at the Flemish Cap in 2001, A, and 2000, B.