FISHING OF THE COMMON SOLE, SOLEA SOLEA (LINNAEUS, 1758) IN THE EASTERN ADRIATIC SEA

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Abstract

Common sole *Solea solea* (Linnaeus, 1758), is one of the most important commercial species in the Eastern Adriatic Sea. It is widely distributed throughout sandy and muddy bottoms of whole Adriatic, but its greatest occurrence is in the northern part. A total of 2.798 specimens of the common sole were caught by trammel nets in the period December 2002 – February 2003. Total length (TL) ranged from 20.0 to 39.8 cm (mean = 29.38 cm, SD = 2.49) and age from 2-7 years, with the 2- and 3-year old individuals dominating the samples (87.7 %).

Keywords: common sole, trammel net, fishing, total length, age

Introduction

The common sole, *Solea solea* (Linnaeus, 1758) is a demersal fish species preferring muddy and sandy bottoms. It occurs also in estuaries or even in the lower parts of the rivers. Juveniles frequently appear near shores, while adults can be found even at depths of 250 m. Spawning starts offshore at the end of autumn or early in winter (1). It is one of the most important commercial species in the Adriatic, especially in its northern part, which is the main fishing area of the species caught by scallop dredges, bottom trawls, gillnets and trammel nets. The later are the main fishing gears for the species and according to the Croatian fishery legislation their use is prohibited during the period 1st of June - 1st of September.

Material and methods

Samples were collected from the western coasts of Istrian peninsula (eastern part of the Northern Adriatic), using commercial fishermen, at depths of 20 - 40 m, during the period from December 2002 through February 2003. Trammel nets were of twisted multifilament polyamide, with mesh sizes of 80 and 320 mm (stretched mesh) in the inner and outer panel, respectively. Generally, a series of trammel nets used were consisted of 18-20 single, 18 m long, nets of 1 m height. For each specimen the total length (TL, to the nearest mm) and weight (W, to the nearest g) were measured. Age was determined by reading otoliths.

Results and discussion

During the investigated period a total of 4989 specimens of fish and other marine organisms were caught by trammel nets. Overall, 49 different species were recorded (40 fish, 3 cephalopods, 5 crustaceans and 1 shellfish). 2798 individuals of common sole were caught representing 70.9 and 70.4% of the total catch by number and weight, respectively. The second most abundant fish species was *Merluccius merluccius* (4.0% of the total catch by number and 3.0% by weight). Other sole species, *Solea kleini*, *Solea nasuta* and *Solea impar* were caught sporadically. Cuttlefish, *Sepia officinalis,* consisted 7.1% of the total catch by number and 11.7% by weight. *Squilla mantis* was the dominant crustacean species (7.9% and 2.4% by number and weight, respectively). Weight of caught common sole specimens ranged from 62 to 592 g (W ± SD = 228.9 ± 76.92 g). The total length of common sole ranged from 20.0 to 39.8 cm (Fig. 1). The average length (29.38 ± 2.493 cm) was higher then that reported for the same species caught by gillnets in the western parts of the Northern Adriatic (2). The age of common sole specimens were 2 to 7 years old (Fig. 2). The 2- and 3-years old classes were the most abundant (87.7%). The comparison of these results to those from gillnets, suggests that trammel nets of 80 mm mesh size are much more selective than 64-68 mm mesh size gillnets. Moreover, gillnet research reported large percentages of specimens under the minimum legal size of 20 cm (9-30% depending on season), while in trammel nets such small specimens were not found. An explanation could be that gillnets used at the western parts of the Northern Adriatic are characterized by small height (2-2.5 m) and very low buoyancy of floats, that allow gillnets to lay on the bottom and therefore catch common sole in a manner similar to trammel nets, but with considerably smaller mesh sizes.

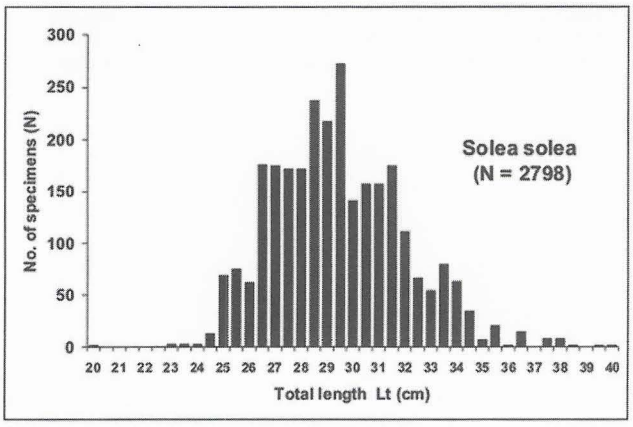

Fig. 1. Total length frequency distribution of *Solea solea* (Istrian Peninsula), December 2002 - February 2003.

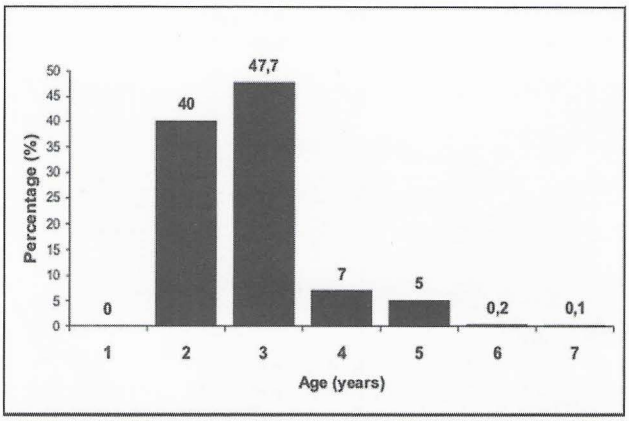

Fig. 2. Age composition of *Solea solea* (Istrian Peninsula), December 2002 - February 2003.

References

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