Natural and Engineering Sciences

Abstracts Book of International Grouper Workshop, 07-08 October 2016, Bodrum, Turkey.

Determination of Sagittal Otolith Biometry and Fish Size of *Serranus cabrilla* (Linnaeus, 1758) Distributed in Southern Aegean Sea

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Abstract

Fish otoliths are generally used to determine taxon, age and size of the teleost fishes, and are useful tools for studies of prey-predator relationships, population dynamics and ichthyo-archaeology. In the present study, the relationship equations were calculated between fish length (TL), weight (W) versus sagittal otolith length (OL), height (OH) and weight (OW) in comber (*Serranus cabrilla*, Linnaeus, 1758) specimens (N=310, 95–225 mm in TL and 7.54–111.27 g) captured via bottom trawl vessels from off the Gulluk Bay (Southern Aegean Sea) between January and December 2013. Since no statistical differences between left and right otoliths ($p>0.05$), left otolith pairs were used for calculations. Regression formulas were calculated as follows: $TL= 28.75*OL–22.31$, $TL= 64.36*OH–6.808$, $TL= 2380*OW^{0.640}$, $W=0.056*OL^{3.618}$, $W= 2.029*OH^{3.254}$, $W= 5168*OW–28.33$, $OH= 0.414*OL–0.054$, $OW= 0.0000053*OL^{1.542}$, and $OW= 0.003*OH^{1.382}$. Calculated regressions were displayed a high coefficient of determinations ranging between 0.793-0.938. The linear and non-linear functions provided the best fit for %44 and %56, respectively. The aim of this study is to fill in the missing data concerning otolith and fish size relationships of the species in the southern Aegean Sea, thereby providing researchers studying food habits of top predators to determine the size and weight of prey fish from length or weight of recovered otoliths.

Keywords:
Comber, Serranidae, sagittae, ototlith size