

## Study on growth and mortality of Obtuse Barracuda (*Sphyraena obtusata*) in the Persian Gulf and Omman sea Hormozgan Province

Farshid Mirzaei Sadr<sup>1</sup>

Hadi Raeisi<sup>2\*</sup>

Mohammad Harsij<sup>3</sup>

Sarah Haghparast<sup>4</sup>

Hojatolah Jafariyan<sup>5</sup>

Ziya Kordjazi<sup>6</sup>

Mohammad Hasan Gerami<sup>7</sup>

1. Ph.D. Student of Aquatic Production and Exploitation, Gonbad Kavous University, Gonbad Kavous, Iran

2, 6. Assistant Professor, Department of Fisheries, Faculty of Agricultural Sciences and Natural Resources, Gonbad Kavous University, Gonbad Kavous, Iran.

3, 5. Associate Professor, Department of Biology, Faculty of Basic Sciences, Gonbad Kavous University, Gonbad Kavous, Iran.

4. Assistant Professor, Department of Fisheries, Animal Science and Fishereis Faculty, Sari agricultural Sciences and Natural Resources university, Sari, Iran.

7. PhD of Aquatic Production and Exploitation, Gonbad Kavous University, Gonbad Kavous, Iran.

**\*Corresponding author:**

Raeisi\_hadi@yahoo.com

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### Abstract

This study was conducted to estimate length-weight parameters of obtuse barracuda (*Sphyraena obtusata*) in fishing grounds of the Persian Gulf and Oman Sea (Hormozgan province) during 18 months from September 2019 to February 2021. Sampling was done using mid-water trawlers, Goshgir and Moshta nets. Totally, 443 samples including 206 males and 237 females were subjected to biometric measurements and sex determination. Mean length of male, female and the whole population of obtuse barracuda were  $22.61 \pm 2.97$  cm,  $22.57 \pm 2.8$  cm and  $22.48 \pm 3.11$  cm, respectively. Using least square method for fitting, length-weight relationship for male was  $W = 0.004 \times L^{3.16}$ , for female was  $W = 0.004 \times L^{3.208}$ , and for the whole population was  $W = 0.004 \times L^{3.189}$ . Considering the growth models tested here, parameters of  $L_{\infty}$ ,  $k$ ,  $t_0$  were 30.25 cm, 0.587 year<sup>-1</sup> and -0.257 for male, respectively, males, 32.1 cm, -0.46 year<sup>-1</sup>, -0.349 for female respectively and 59.17 cm, 0.195 year<sup>-1</sup>, -0.726 and 4.65 cm respectively for the whole population. A logistic relationship was found between fish weight and fish age. The infinite weights of male, female and the whole population of obtuse barracuda were estimated 295.02 g, 241.23 g and 326.2 g, respectively. Total mortality was obtained 1.562 year<sup>-1</sup> for male, 1.006 year<sup>-1</sup> for female and 1.332 year<sup>-1</sup> for the whole population. Exploitation rate was estimated 60% for male, 51 % for female and 54% for the whole population. The present results indicate a pressure on obtuse barracuda stock and if it is continuing, the fish stocks will be drastically declined in near future.

**Keywords:** obtuse barracuda, length-weight, Exploitation rate, mortality, age-weight relationship, *Sphyraena obtusata*, Hormozgan Province.