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Population parameters of an exploited population of *Isostichopus fuscus* (Holothuroidea) in the southern Gulf of California, Mexico

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This study presents data on size structure, growth, natural and fishing mortality rates, probability of capture and seasonal recruitment to the fishery of an exploited stock of the holothurian Isostichopus fuscus from San Gabriel Bay, southern Gulf of California, México, sampled in 1992-1993 (259 specimens), and analyzed with size frequency methods. Mean±S.E. length and weight (19.27±0.29 cm; 338.17±9.31 g) indicated that individuals from the population were smaller than those from the northern Gulf of California, but larger than in populations of southern México or the Galápagos Islands. The slope of the length-weight relationship (b=1.36) indicated that I. fuscus grew alometrically. The Bertalanffy equation for length at age was: length at time t (years)=29.108[1-(exp(-0.243(t-0.036)))]. Individuals smaller than 6.08 cm were younger than 1 year old and the largest reached 9 years or more. Population mean and modal age, and age for maturity were 5 years. Estimated natural mortality (M; median value obtained from figures generated by six different methods) was 0.354, and median fishing mortality (F) was 0.346, adding to a total mortality rate (Z) of 0.70. The curve of probability of capture showed that 50% of the population reaching 21.18 cm (5 years old) was susceptible for exploitation, and that most individuals larger than 23 cm (6 years old) were included in the fishery. The recruitment to the exploited stock was higher in fall and lower in winter and spring. We recommend the use of size frequency methods to provide basic information, urgently needed for management of holothurians worldwide.

Palabras clave: Tendencias espaciales, Specialist, growth, Isostichopus fuscus, holothurians, Mortality, Size structure