



Ribot Carballal, M.C., F. Galván Magaña & C. Quiñonez Velazquez (2005). Age and growth of the shortfin mako shark *Isurus oxyrinchus* from the western coast of Baja California Sur, Mexico. Fisheries Research, 76(1): 14-21. DOI: 10.1016/j.fishres.2005.05.004

## Age and growth of the shortfin mako shark *Isurus oxyrinchus* from the western coast of Baja California Sur, Mexico

M.C. Ribot Carballal, Felipe Galván Magaña & Casimiro Quiñonez Velazquez

Age and growth of the shortfin mako shark, *Isurus oxyrinchus*, were estimated using the number of growth marks on whole vertebrae from 109 individuals caught during 2000-2003 off the western coast of Baja California Sur, Mexico. A further 110 individuals were measured to obtain data on the age distribution of the population being fished. Sharks ranged from 77 to 290 cm in total length (TL). A significant linear relationship ( $r^2 = 0.91$ ) was found between the vertebrae radius and total length, suggesting isometric growth of vertebrae with total length. Distinct bands of heavier calcification were visualized with silver nitrate staining. The periodicity of these growth marks was determined by the frequency of clear and dark margins of the vertebrae in each month of the year. We found that one growth mark is deposited annually. Estimated ages ranged from 0 to 18 years, with the majority of fish being 1-5 years old. Age and TL were used to describe the shortfin mako growth. Estimates of the von Bertalanffy curve parameters for the combined sexes were:  $L[\infty] = 411$  cm TL,  $k = 0.05$  year<sup>-1</sup>,  $t_0 = -4.7$  years. Our results suggest that shortfin makos are relatively slow growing sharks, which combined with other life-history traits such as a low fecundity and delayed reproduction, makes this species highly susceptible to overfishing.

Palabras clave: La Paz, growth, Age, *Isurus oxyrinchus*, Mako shark

Para obtener copia del documento contacta con el autor (fgalvan@ipn.mx) o con el personal de la biblioteca (bibliocicimar@ipn.mx).