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Reproductive Dynamics of the Common Sole *Solea solea* (Linnaeus, 1758) from Bardawil Lagoon, North Sinai, Egypt

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Abstract

The soles (family Soleidae) are one of the most important fish species inhabiting Bardawil lagoon, North Sinai, Egypt. Sole catch composes of two species from which the common sole, *Solea solea* is the most common one. They are being exploited by the usage of trammel nets (locally known as Dabba) and earning up to 10 million Egyptian pound annually. Reproduction is an important biological aspect among fishes, where the recruitment and stock abundance depend on. Therefore maturity, spawning season, fecundity, length and age at first sexual maturity and sex ratio of *S. solea* in Bardawil lagoon were studied. The monthly gonado-somatic indices and macroscopically investigated maturity stages indicated that *S. solea* spawns in the late autumn to the early spring from November to April with peak in December. The overall sex ratio throughout the study period was 1:2.11 males to females, which was significantly different from 1:1. The absolute fecundity ranged from 270,000 to 1,200,000 eggs in females with total weights varying from 31 to 400 g. The size at 50 % sexual maturity (L50) was 18.7 and 19.6 cm TL for males and females, respectively. It was found that about 58 % of *S. solea* were caught before reaching their first sexual maturity. The estimated L50s indicate that the current minimum legal length in Bardawil lagoon is not appropriate for managing this species. The study recommends reduction of fishing pressure especially during spawning season and reevaluated the mesh sizes of dabba nets used in the lagoon as well as prohibited trawling in the lagoon.

Keywords: Bardawil lagoon, length at first sexual maturity, management, sex ratio, *Solea solea*, spawning season

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