

Section 2

Executive Summary of the Project:

This should be limited to 200-250 words and include the scientific background and objectives, methodology and major findings

The present investigation was carried out from June 2007 to May 2009 to understand the systematic and population dynamics of squids in the northern coastal waters of Sri Lanka. Among the three species of squids recorded *Sepioteuthis lessoniana* is the most abundant squids found throughout the year and therefore the present investigation was continued with *S. lessoniana*. Regression analysis of length weight relationship revealed that the squid follows cube law. Histological analysis of gonads showed male and female were categorized into immature, maturing, fully maturing and matured. High occurrence of spawning stage in squids observed in August 2007, November 2007, April 2008 and October 2008 suggests that the peak spawning period is in those months even though it spawns throughout the year. Presence of all stages of macroscopic eggs in the same ovaries confirms that it spawns more than once and said to be asynchronous. Fecundity varied from 20 to 852 but a weak correlation was obtained with mantle length. Size at maturity curves indicated male reached maturity at 15 cm mantle length while female reached maturity at 17.5 cm mantle length. The optimized values for K and L_{∞} obtained by the ELEFAN I was 0.83 year^{-1} and 31.10 cm. The estimated t_0 value was -0.191. The length-converted catch curve gave a Z value of 3.75 year^{-1} . The natural mortality coefficient (M) obtained through Pauly's empirical model was 1.64 year^{-1} . The computed instantaneous fishing mortality coefficient (F) is 2.11. The predicted exploitation rate is 0.501. The computed exploitation rate of 0.56 is slightly above the predicted E_{\max} express that the stock is slightly overexploited. Thus, the fishing pressure on the stock has to be reduced. More capture should be prohibited by a reasonable decrease in the effort or by modifying the mesh size of the net for *S. lessoniana* species.