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Molecular and biological aspects of Kawakawa (*Euthynnus affinis*) from the coastal waters of Sri Lanka

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Acquisition of fishery data and information on the biology and reproduction of fish is very important for the management of the fishery industry. Kawakawa (*Euthynnus affinis*) is one of the most important neritic tuna species found in commercial fish catches of Sri Lanka. It contributes 18% to the total tuna and tuna-like fishery of Sri Lanka. Gillnet is the major fishing gear used for this fishery, with 54% of the Kawakawa catch being from gillnets. This study was undertaken to collect information on morphometrics, feeding, and spawning of Kawakawa, and for the molecular identification of the species found in Sri Lankan waters. A total of 330 samples were collected monthly from October 2015 to March 2017 from Mirissa, Weligama, Galle, Dodanduwa, Beruwela, Negombo, Chilaw, Kalpitiya, and Trincomalee. The total lengths of the samples collected ranged from 17.9 to 63.3 cm and the weights ranged from 76.2 to 3,590.7 g. The total length range in which the highest number of fish had been sampled was 44.1 to 46.0 cm. The length weight relationship equation for the sampled fish was $W=0.009L$, indicating that the species has a healthy growth pattern in its natural environment. The analysis of the stomach contents revealed that 37% of the stomachs were full, while 8%, 13%, 14% and 28% were three fourths full, half full, one fourth full and empty respectively. By the analysis of the stomachs, which contained food by the frequency of occurrence method, it was seen that 60% of the stomachs contained fish (herrings, anchovies, *Sardinella* sp. and ribbon fish), 16% shrimp, 5% cephalopods, 11% fish and shrimp, 7% fish and cephalopods and 1% shrimp and cephalopods (by weight). In addition, a few stomachs contained stomatopod larvae, plastics debris and plant leaves. This shows that Kawakawa are non-selective feeders. The Gonado-Somatic Index (GSI) gave 2 peaks, which shows that spawning is prolonged from May to October. The fecundity ranged from 203,000 to 1,723,000. DNA Barcoding for nine samples confirmed the species present in the Indian Ocean as being *Euthynnusaffinis* with 99.8% similarity.

Keywords: *Euthynnus affinis*, barcoding, feeding, spawning.

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