

Investigating the Infection Rates of Hector's Lantern Fish (*Lampanyctodes hectoris*) by the Copepod Parasite (*Cardiodectes bellotti*) and the Implications for Population Dynamics

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Hector’s lantern fish (*Lampanyctodes hectoris*), a common mesopelagic species along the west coast, is known to be parasitized by the copepod *Cardiodectes bellotti*, which consumes its host’s blood. Although the impact of this parasite on other lantern fish species is documented, its effects on Hector’s lantern fish remain unexplored. This study aimed to investigate the population dynamics and infection rates of Hector’s lantern fish, with 500 samples collected across various locations in the Southern Benguela during 2024. The study, conducted in collaboration with a specialist from the Department of Forestry and Fisheries (DFFE), involved detailed measurements of fish length, weight, and gonad staging, as well as parasite identification. A total of 288 lantern fish were analyzed, with lengths ranging from 4.4 to 8.9 cm, predominantly between 5.0 and 5.8 cm. Statistical analysis indicated that the relationship between fish length and weight, considering the presence of parasites, was best described by a power curve with high R^2 values. Microscopic examination determined the sex and gonad stage of the fish. Results revealed that parasitism by *Cardiodectes bellotti* adversely affects the growth in length and mass of Hector’s lantern fish. This highlights the negative ecological and economic impacts of the parasite, underlining the need for the DFFE to consider reducing allowable catches to prevent further depletion of the lantern fish population.

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