

Research Article

Holothuria leucospilota Population in Satang Besar Island, Sarawak, Malaysia

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Holothuria leucospilota or locally known as “Patola” is currently considered the most abundant sea cucumber species in Malaysia. This coral reef-dwelling species is not in danger of extinction in comparison to commercial sea cucumbers such as “gamat.” However, overfishing activities in addition to lack of fishing regulations in Malaysia could put this species at risk of extinction in the future. It is important to conduct research on the sea cucumber community in Sarawak because the data can be used as reliable information for future research. Therefore, this study is carried out to quantify and estimate the *Holothuria leucospilota* population from an intertidal area of Satang Besar Island, Sarawak, Malaysia. Ten stations surrounding the island were selected as the location for this study. A total number of 203 individuals of *Holothuria leucospilota* were recorded and estimation of the population that inhabits the island’s intertidal area was 609 individuals. RELATE test showed relationships between species population and water parameters, namely, temperature, salinity, and pH. Results from this study are important as a baseline data that might contribute to the sustainable management of Sarawak, Malaysia’s sea cucumber in the future. Future work suggestions include addition of subtidal samples and other factors, namely, seawater nutrients and feeding environment, that should be done to better understand the population.

1. Introduction

Holothuria leucospilota or locally known as Patola or bat puntil is currently considered as the most abundant sea cucumber species in Malaysia [1]. This species is usually found in coral reefs’ sandy area. This species is tolerant to air exposure over a long period of time and might be found in the area closest to the coast [2]. This species can be found inhabiting the coastal areas of subtropical and tropical oceans [3]. *Holothuria leucospilota* is commonly found at the edge of reef flat shore in the intertidal area, where it occupies tidal pool with the depths ranging from several centimetres to a half metre or being fully exposed [4]. The posterior body of *Holothuria leucospilota* possesses the capability of extension from under rock or a hole in the reef floor where it anchors for feeding [5].

Morphologically, *Holothuria leucospilota* has uniformly black colour body. It is soft-bodied and equipped with

fine protuberances. This species has shield-shaped tentacles which are placed under the order of Aspidochirotrida from the family of Holothuriidae. To further confirm the species identity, ossicle shape from dorsal cuticles of the sample was observed.

This coral reef-dwelling species is not in danger of extinction like the commercial *Stichopus* species such as *Stichopus horrens* that are locally known as gamat [2]. However, due to their widespread and high economic value [6], sea cucumbers in many countries are overfished due to the ease by which sea cucumbers can be collected from shallow reef flats during low tide [7]. Global exploitation of sea cucumbers to meet consumer demand is motivating a rising conservation concern [8–11]. Most tropical sea cucumber fisheries have come under intense fishing pressure in China due to growing human populations that lead to the increase in the demand of sea cucumber product [12]. Moreover, *Holothuria leucospilota* is