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The pattern of growth, condition factor and gillnet selectivity of a commercially important sheatfishes (*Kryptopterus lois*) from waters of Sungai Batang, Indonesia towards sustainable managementAhmadi A^{1,*}¹Faculty of Marine and Fisheries, Lambung Mangkurat University, South Kalimantan, Indonesia*Corresponding author: ahmadi@ulm.ac.id

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Abstract

The present study describes the growth pattern, the condition factor, and the gillnet selectivity of Sheatfishes (*Kryptopterus lois*) from Waters of Sungai Batang, Indonesia. This species is commercially exploited and highly vulnerable to overfishing. Meanwhile, the exploitation rate is greater than the growth rate of the fish. The fish samples were purchased directly at the fishing village once every 2-week during the sampling period. A total of 170 specimens of *K. lois* comprising 78 males and 92 females (total length of 88-215 mm and weigh of 7-89 g) were empirically evaluated. Both males and females grew negatively allometric ($b = 2.34 - 2.76$). No significant difference was observed in total length and body weight between males and females. However, females had body depth and the condition factor (Kn) value greater than males. The highest percentage of catches fell between 140 and 149 mm in total length (TL) (17.39 - 20.51%) and weighed between 15 and 19 g (20.65 - 21.79%). The mean Kn values ranged from 0.77 ± 0.18 to 0.93 ± 0.14 , indicating that fish were still in good condition. The size at first maturity of males and females was predicted as 149 and 147 mm TL. The length at first capture and selection factor obtained were 150 mm TL and 2.36, implying gear selectivity should be improved. The present gillnet was considered female-biased gear with male to female ratio of 1: 1.2. This study provides the baseline scenario for formulating a sustainable fisheries management strategy since many aspects of the *K. lois* fishery are not disclosed.

Keywords: Allometric growth pattern, *Kryptopterus lois*, Gillnet selectivity, Waters of Sungai Batang

1. Introduction

Kryptopterus is a genus of catfishes belonging to the family Siluridae. It is widely distributed in freshwater bodies throughout Southeast Asia. A total of 24 species of genus *Kryptopterus* have been identified and well-documented [1]. *Kryptopterus lois* are beneficial for culinary business, such as being the smoked fish household industry, and the ornamental fish trade. The selling prices of fresh fish at local fishermen and fish markets are 3 and 5 USD per kg, respectively, while the smoked fish is sold at 14 USD per kg. In nature, *Kryptopterus* or *Ompok* species inhabits natural lakes, rivers, and swamp forests [2,3]. They were categorized as carnivore species that consume insects, fry, and shrimps. Species *K. palembangensis* and *K. bicirrhis* were abundantly found during the rainy season, closely related to the availability of food resources, migration, and flooding cycles [2,4]. These can be cultured in floating cages, rain reservoir ponds, or aquaponic recirculation systems and responsive to artificial feeds [5,6]. Some species like *Ompok hypothalamus*, *K. Apogon*, and *K. bicirrhis* were considered total spawner fish [2]. An effort to domesticate *O. hypothalamus* in the fishpond was also performed as part of protection and conservation measures [7]. At the same time, breeding technologies were also being developed for those species [8].

Each fish species of the family Siluridae has its own morphometric and meristic characteristics and may behave differently to its surrounding environment. To bring about the *Kryptopterus* fishery resource practically, it is necessary to comprehensively study its biological, ecological, and socio-economic aspects [9-11]. The most