



The status of yellow pufferfish, *Xenopterus naritus* (Richardson, 1848) from the Southwest coast of Sarawak, Northwestern Borneo, Malaysia

¹Ahmad Syafiq Ahmad Nasir, ¹Samsur Mohamad, ²Mohammed Mohidin

¹ Department of Aquatic Science, Faculty of Resource Science and Technology, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia; ² Fisheries Research Institute Bintawa, Bintawa, Kuching, Sarawak, Malaysia. Corresponding author: A. S. A. Nasir, anahmadsyafiq@gmail.com

Abstract. The yellow pufferfish, *Xenopterus naritus* is a commercially important target species for the artisanal fishermen in Sarawak. There is concern over its conservation and population structure. Therefore we provided a baseline data on size distribution, sex ratio, length-weight relationship and condition factor of 65 specimens of this species, landed from May 2015 to July 2014 from eight distinct locations (Kabong, Sematan, Buntal, Paloh, Sadong Jaya, Pusa, Sebang and Spaoh) representing the Southwest coast of Sarawak waters. Specimens were obtained by hiring local fishermen to catch them and purchasing from fish markets. Generally, males were significantly smaller and lighter than females. Total length, standard length and body weight of combined sexes of *X. naritus* was found in the size range of 10.6–29.5 cm, 8.8–26.7 cm and 20.16–646.76 g respectively. Male to female sex ratio was 1M:2.8F. Length–weight relationships of *X. naritus* exhibited positive growth allometry in males but negative growth allometry in females, whereas positive growth allometry in combined sexes. Condition factor in overall specimens was 2.279 ± 0.434 which reflects the healthiness of *X. naritus* and favorable environmental conditions in Sarawak waters. Findings of the present study contribute as important baseline data for future studies not only on the fisheries and stock management of *X. naritus* but also on conservation and aquaculture development of this commercially important species.

Key Words: Tetraodontidae, size distribution, length-weight relationship, condition factor, aquaculture.

Introduction. Fisheries and aquaculture have been important sources of food, generated lucrative income and supported livelihoods for hundreds of millions of people around the globe (FAO 2016). In Sarawak, the total landings of capture fisheries in 2015 was 147,579 metric tons and worth USD 169.35 million (DOF 2015). Various management strategies have been formulated and implemented to control fishing effort and promote rehabilitation and conservation of valuable marine resources and marine ecosystems (Saad et al 2012).

Most of the management strategies are based on knowledge that is adequate to conclude cause-and-effect relationships between management actions and fish population (Radomski & Goeman 1996). Frequent assessments are vital because population size, structure, and species distribution often changes in response to environmental variations from anthropogenic activities and natural disturbances (Shelton & Mangel 2011; Van Dover 2014; Micheli et al 2016). Thus, status and trends in size distribution and growth pattern of fish in a population are important baseline data for sustainable fisheries management.

The yellow pufferfish, *Xenopterus naritus* (Richardson, 1848) (Teleostei: Tetraodontidae), is widely distributed in China, Thailand, Indonesia, Vietnam, Myanmar, India and Malaysia. In Malaysia, this species can only be found in Southwest coast of Sarawak, starting from Tg. Datu in Sematan further up to Mukah, central Sarawak (Figure 1). *X. naritus* is considered as trash fish in commercial fishery, but an important target species among the small-scale, artisanal fishermen along coastal and major estuaries in Sarawak. Today, it is one of the fish species with higher commercial value and its market demand is on the rise, to the extent that it has raised interest in culturing it (Nasir et al