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Length-weight relationships of eight fish from seagrass meadows in Wenchang, China

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Abstract

The length-weight relationships (LWRs) were studied for eight seagrass fish from Wenchang, China, using gill nets (150*1 m, mesh size 0.5 cm), including *Gerres oblongus*, *Ambassis kopsii*, *Halichoeres nigrescens*, *Sillago aeolus*, *Yongeichthys criniger*, *Oxyurichthys tentacularis*, *Lethrinus haematopterus* and *Hypoatherina tsurugae*, in November 2017, March and August 2018. Results suggest that mean LWR parameters *b* for these eight seagrass fish varied from 2.801 for *L. haematopterus* to 3.640 for *A. kopsii*, and r^2 valued from .950 for *L. haematopterus* to 0.993 for *H. nigrescens*. This study will help us to better understand the ecological parameters these seagrass fish.

KEYWORDS

length-weight relationships, seagrass fish, South China Sea

1 | INTRODUCTION

Length-weight relationships (LWRs) are used for estimating the weight corresponding to a given length, they are important for fishery research and management. However, within-species variance in LWRs depends on the population, the season, or annual differences in environmental conditions (Froese, 2006; Froese, Thorson, & Reyes, 2013).

Seagrass meadows are important for their high ecological, economic and scientific value (Unsworth, Nordlund, & Cullen-Unsworth, 2018). Seagrass ecosystem in Wenchang, east coast of Hainan province, is the largest area of seagrass meadows in China (Zheng, Qiu, Fan, & Zhang, 2013). However, seagrass coverage in this area has experienced a sharp decline between 2004 and 2013 (Chen et al., 2015). In this study, we presented the length weight relationships for eight species from Wencheng, providing some basic information to be incorporated in further basic fishery data monitoring and thereby assisting fisheries management.

2 | MATERIALS AND METHODS

The study was conducted in the seagrass meadows in the southeast coast of Hainan Province, in November 2017, March and August 2018. Fish samples were caught with gill nets (height 1 m, length 150 m, mesh size 0.5 cm) between 10:00–12:00 a.m. at three stations in the study area. All fishes were identified to the species level (Chen & Zhang, 2015; Chen & Yang, 2013; Froese & Pauly, 2018; Liu, Wu, Kang, & Ma, 2016; Liu, Chen, & Yang, 2013). The standard length (SL) of each specimen was measured to 0.1cm accuracy, and the total weight (TW) with 0.1 g accuracy.

The LWRs of these species were estimated using log-transformed equation:

