

Feeding Habits of Tonguefishes, *Cynoglossus robustus* and *Cynoglossus abbreviatus*, in the Seto Inland Sea, Japan

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INTRODUCTION

The tonguefish, *Cynoglossus robustus* and *C. abbreviatus* (Order Pleuronectiformes, Family Cynoglossidae), inhabits on soft and sand mud bottoms at depth of 20~85 m around Korea, China and Japan (Nakabo, 1993; Okamura *et al.*, 1997).

The tonguefishes are economically important species and are relatively abundant among the fishes found in the Seto Inland Sea (Inaba, 1963; Inaba, 1988). Until now, however, there has been little detailed information about the feeding habits of *C. robustus* and *C. abbreviatus*.

This study examined feeding habits with regard to prey items, ontogenetic changes with fish size and seasonal change of prey organisms of *C. robustus* and *C. abbreviatus* in the Seto Inland Sea.

MATERIALS AND METHODS

Specimens of *C. robustus* and *C. abbreviatus* were collected monthly from fish markets around the Seto Inland Sea, between June 2000 and May 2001.

For each specimen, prey items were identified according to Nishimura (1995), Takeda (1982) and Namibe (1967) and were counted under a dissecting microscope.

RESULTS AND DISCUSSION

The stomach contents of *C. abbreviatus* and *C. robustus* varied with size of the

fishes and with the season. These fish species are a marine bottom-feeding carnivores that consume mainly Ophiuroidea, Caridea, Bivalvia, Brachyura, Amphipoda, Polychaeta and Gastropoda. The main food items exist abundantly in the study area (Akihiko, 1963; Akihiko, 1983; Akihiko, 1988). Of these, Ophiuroidea was especially abundant all year round. By contrast, Ophiuroidea was found to be a relatively less important food item with 8.74% of all stomach contents by dry weight for *C. robustus* examined during the same period in the same study area. *C. abbreviatus*, however, consumed Ophiuroidea as the most important food. Caridea was an important prey item for both *C. robustus* and *C. abbreviatus*.

Generally speaking, bottom-feeding carnivores gradually change prey items with their own size as predator. The present study, however, did not show a gradual change in food items with size of *C. abbreviatus*. Changes in food from Ophiuroidea, Caridea and Gastropoda to Ophiuroidea, Polychaeta and Gastropoda occurred at the sizes of 15~25 cmTL to 25~49 cmTL. This is because small *C. abbreviatus* of 15~25 cmTL have small mouths, and bigger fish of 25~49 cmTL have larger mouths: fish with larger mouths can consume larger prey (Gaughan and Potter, 1997).

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