



## Feeding Habits and Trophic Levels of Dominant Fish Species in Setiu Wetlands, Terengganu, Malaysia

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Fishes are among the major predators in aquatic ecosystems and play a crucial role in regulating trophic interactions and maintaining the structure and functioning of aquatic food webs. The objective of this study was to examine the feeding habits and determine the trophic positions of the nine most abundant fish species in the Setiu Wetlands. This study investigated the feeding habits of fish using stomach content analysis, a widely employed method in fish ecology for examining trophic relationships within aquatic communities. The diets and trophic levels of nine fish species belonging to eight families in the Setiu Wetlands were studied from June 2011 to July 2012. A total of 1394 fish specimens were collected through monthly sampling at three distinct sites (Pulau Telaga Tujuh, Pulau Che Him and Pulau Tok Haji) representing mangrove, mudflat and aquaculture habitats. Diet composition was assessed using the Index of Relative Importance (%IRI), while trophic levels were estimated using the TROPH index. Based on their trophic levels and dietary composition, the five species were classified into detritivorous, herbivorous, and omnivorous feeding groups. These included *Siganus javus*, *Nuchequula longicornis*, *Leiognathus equula*, *Siganus guttatus*, and *Ambassis kopsii*. Specifically, *Siganus javus* was predominantly herbivorous, with plants accounting for 70.6% of the Index of Relative Importance (%IRI), whereas *Nuchequula longicornis* was a specialized detritivore with sand/detritus contributing 98.4% of its diet. In contrast, *Ambassis interrupta*, *Lutjanus russellii*, *Yarica hyalosoma* and *Dichotomys nigroviridis* exhibited carnivorous feeding habits and functioned as predators within the food web. Among these species, *Yarica hyalosoma* and *Lutjanus russellii* exhibited the highest trophic levels (3.73 and 3.70, respectively), primarily due to their consumption of crustaceans and smaller fishes. The observed TROPH values ranging from 2.00 to 3.73 indicate a broad trophic spectrum, encompassing primary consumers to higher-level predators within the ecosystem. This study identifies the primary trophic interactions among nine abundant fish species across three main trophic levels: primary producers, primary consumers, and mid-level secondary consumers within the Setiu Wetlands ecosystem. The data as baseline information on previously understudied species and may contribute to improved aquatic management, agriculture, aquaculture, and conservation practices. In conclusion, the results highlight the importance of Setiu Wetlands as a critical feeding ground and underscore the vital role of aquatic invertebrates in maintaining the energy flow within this mangrove ecosystem.

**Keywords:** Diet composition, Index of relative importance, Food web, Estuarine ecology, Terengganu coastal

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