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Study of Major Reef Fish Families and Their Feeding Types with Relation to Different Size Variations in three Major Coral Reefs in Southern Province of Sri Lanka

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Abstract

Reef fish are vital for reef health as their feeding types disturb the benthic environment. Studies on reef fishes have been supported to conserve and manage both reef fishes and the reef environment. But studies on reef fish are rarely conducted in Sri Lanka. The present study was conducted at the Paraiwella, Polhena, and Hikkaduwa coral reefs in Southern Province in Sri Lanka to study the prominent reef fish families, their feeding habits, and size variations. The Stationary Point Count method (SPC) with 5 m radius water column was used for surveying the reefs. Data were collected between September 2018 to February 2019. Reef fish families, their feeding habits (herbivores, carnivores and omnivores) and their size classes (Small, Medium, and Large) were observed. Reef fish were identified using existing field guides. Twenty-five families were recorded, and among them, four families (Acanthuridae, Pomacentridae, Labridae, and Monodactylidae) showed dominance throughout the reefs. The diversity of reef fish between the three reefs were significantly different (One-way ANOVA, $p<0.05$). Paraiwella had the highest diversity of reef fish, followed by Polhena and Hikkaduwa reefs. The partial ban of the Paraiwella reef can be a reason for this high diversity. But the highest abundance of fish was recorded in the Hikkaduwa reef. Omnivore was the feeding type of more than 50% of fish followed by herbivores and carnivores. Medium Medium-size fish were the most abundant. As there were some breeding grounds among the reefs, small size fish were the second most abundant. Since this was a preliminary study, continuous studies are recommended to be carried out around Sri Lankan waters spatially and temporally.

Keywords: Reef fish, Stationary point count, Feeding type, Size variation, Sri Lanka