

Abundance and Diversity of Reef Associated Fish Species in the Eastern Coast of Sri Lanka

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Reef fishes are important marine fauna that provides benefits to reef ecosystems. Although their ecological role is extremely important for the healthiness of the coral reef ecosystem, marine ornamental fishing industry, coastal food fish industry, tourism industry, and lack of monitoring and caring, severely degrade reef fish stocks in the eastern coast of Sri Lanka. Since it is highly important to keep up to date scientific records, a survey was conducted in the final quarter of 2019 using fish belt transect method by snorkeling and/or diving over five selected sites; Passikudah, Kayankerni, Adukkuparu, Parrot rock, and Pigeon island as major and most important reefs in Eastern coast. Threats on sites were identified by visual observation and questioner surveying. 289 reef fish species belonging to 41 families were recorded from all five sites. Reef fish species of each site recorded as 41, 131, 31, 103, and 156 respectively. The highest abundance of fish was recorded in the Kayankerni reef, with a greater number of Damselfish and their abundance was increased from shallow (1 m) to deeper (5 m) area while the lowest abundance was recorded in the Adukkuparu reef. The highest biodiversity (0.96), species richness (103), and evenness (0.65) were recorded in the Parrot rock which may due to the highest recorded coral diversity (0.93) and lives coral cover (70%) of the reef. Lowest reef fish diversity (0.68) was recorded in the Passikudah reef which may due to the low coral diversity of the reef (21% live coral cover) but with the highest (51%) algae cover. Marine ornamental fish trade, tourist attraction, invasive species, and pollution were the majorly identified threats to reef fish stocks in the eastern coast of Sri Lanka. *Acanthaster planci* and *Halimeda* sp. are the identified invasive species. Reef fish species and Coral reefs on the eastern coast are in highly threaten level and the Parrot rock and the Kayankerni reefs are recommended to declare as marine national parks.

Keywords: Reef fish, Coral reefs, Eastern coast of Sri Lanka, Kayankerni and Pigeon Island