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Recent Survey on Ornamental Fish Diversity and Threats to Southern Bar Reef Area of Kalpitiya in Sri Lanka

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Bar Reef is an important coral ecosystem declared as a marine sanctuary of 306.7 km^2 area, which is located at 8°23'N and 79°44'E stretching parallel to Kalpitiya peninsula, in Sri Lanka. A part of it is a special management area due to human activities impinging directly on its protection. The present study was carried in November 2013 with the specific objective of documenting baseline data on fish species, their occurrence and ecological significance for its conservation and management of the Bar Reef. A total of 8 study sites in the southern area of Bar Reef were randomly selected, and fishes were counted along 50 m transect by visual census. A total of 97 fish species in 22 families were recorded. Of them, family Pomacentridae was the most diverse (15 spp.) and abundant (relative abundance >13.8 %). Each site surveyed recorded a considerably varied number of species. The highest species richness was 60 in 22 families in site 2 whereas the lowest was 17 in 9 families at site 4. From the present survey, it was evident that, rare marine fish families of ornamental value and high demand *viz*. Balistidae, Chaetodontidae, Caesionidae and Labridae are found in the southern Bar Reef area. Of them, the presence of *Chaetodon* species such as *C. decussates, C. lineolatus, C. lunula, C. trifasciatus, C. vagabundus* and *C. xanthocephalus* is significant due to their high values. However, it was evident that ornamental fishes in Bar Reef are under threat due to over-exploitation, harmful fishing methods and pollution. The study also revealed that eco-tourism based activities *viz*. snorkelers and divers, often standing on reefs, walking over corals in the shallows and at low tide, bring in negative impacts. The SWOT analysis showed that proper enforcement of the existing rules or regulations is a necessity for its conservation management. A participatory approach involving local communities for effective law enforcement and conducting awareness programs for different target groups are logical initiatives to mitigate adverse effects of pollution, coral reef damage and over-harvesting of species from this unique ecosystem.

Keywords: Bar Reef, coral eco-system, marine fish, protection and threats