



---

## BIOFOULING COMMUNITY ON ARTIFICIAL SETTLEMENT COLLECTORS IN COLOMBO PORT, SRI LANKA

Marasinghe M.M.K.I.<sup>1</sup>, Ranatunga R.R.M.K.P.<sup>1\*</sup> and Anil A.C.<sup>2</sup>

<sup>1</sup>Marine and Coastal Ecology Laboratory, Department of Zoology, Faculty of Applied Sciences,  
University of Sri Jayewardenepura, Sri Lanka

<sup>2</sup>National Institute of Oceanography, Dona-Paula, Goa, India

ranatunga@sjp.ac.lk

---

### ABSTRACT

Sea ports are well known as entry points for non-indigenous species invasions. With increased ship traffic, Colombo Port environs are highly susceptible for such invasions by geographically distinct species from around the globe posing threats to the native biota and associated ecosystems. The community composition of the invasive species including the biofouling taxa within the Colombo Port and their impacts on native taxa, if any, are poorly understood. Therefore, an assessment on the biofouling community within the Colombo Port is imperative for the protection of our native coastal communities. Biofouling assemblages in 7 sampling locations (i.e. Colombo International Container Terminal (CICT); New Pilot Station (NPS); Old Pilot Station (OPS); Passenger Jetty (PJ); Bandaranayake Quay (BQ); Dockyard Berth (DOCB); Unity Container Terminal (UCT)) within the Colombo Port was investigated from October 2014 to July 2015. The biofouling aggregates were collected through artificial settlement collectors deployed at 1 m, 2 m, 3 m and 4 m depths respectively in each location, where monthly samples were collected by replacing 2 months old settlement plates with clean plates, from one side of the collector at each depth. In the laboratory, specimens were identified to the nearest possible taxonomic category using their fine morphological features. Altogether, 55 species belonging to 8 taxonomic groups, i.e. Bryozoa, Annelida, Chordata, Mollusca, Arthropoda, Porifera, Cnidaria and Echinodermata were recorded. Among the species recorded, Molluscs were the most diverse group that represented 20 species followed by Annelids 8 species, Bryozoans 9 species, Chordates 5 species, Arthropods 9 species, Poriferans 2 species and 1 species each from Cnidaria and Echinodermata. According to the General Linear Model for species richness, depth, sampling locations and species group, there was a significant difference for species richness with respect to depth, location and species group ( $p < 0.05$ ). The highest species richness was recorded at PJ (34) followed by NPS (33), BQ (32), OPS (31), DOCB (28), UCT (28) and CICT (22). The species richness of fouling community increased with the increasing depth and reached to the maximum at 3 m and thereafter decreases with increasing depth.

**Keywords:** Marine biofouling, Species richness, Artificial settlement collectors, Colombo Port