# Comparative Assessment on Non-Indigenous Biofouling Species in Colombo Harbour Basin with Ships Arrive to the Colombo Harbour

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Introduction of non-indigenous aquatic organisms to the new environments through ships biofouling has been identified as a major threat to world oceans and for the conservation of biodiversity. As an island nation with intensive shipping activities, there is a high possibility to introduce invasive species into Sri Lanka through ships biofouling. It is imperative to identify and assess the fouling related invasions in Sri Lankan waters to adopt necessary control measures. This study examined the biofouling related invasion in Colombo port with a view of adopting control measures. The study was undertaken between October 2019 to January 2020 in Colombo port. The hard substrate samples were collected monthly basis from eight sampling locations. The artificial settlement plates were deployed to collect benthic fouling samples. Samples were collected from the ship's hull which arrived at the Colombo port from various regions of the world. 93 biofouling creatures were identified up to their family level and 83 up to their species level. 51% nonindigenous, 35% native, and 4% cryptogenic fouling species were detected. 33 native fouling organisms were detected from all samples. Relative abundance, diversity indices, species richness, and evenness were calculated. Mean relative abundance varied with 0.0169 to 0.0579. *Amphibalanus amptrite* the most abundant species on ship's hull while *Saccostrea cucullata* was the most common species at harbour sites. The exotic species of *Chathamalus montagui* was recorded for the first time in Colombo harbour. The five globally known invasive alien species introduced through ships were recorded. Results imply that some invasive biofouling species had already settled in the harbour basin area and ships arrive in Colombo port poses a risk of introducing invasive species into Sri Lanka waters. This study suggests that it is exigent to adopt relevant international guidelines to mitigate the threat of introducing invasive species through ship biofouling.

*Keywords:* Invasive alien species, Biofouling, Colombo port, Ship's hull, Introducing