

BASELINE STUDY TO DETERMINE GLOBALLY KNOWN MARINE INVASIVE ALIEN SPECIES IN SOUTHERN COAST OF THE SRI LANKA

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Marine Invasive Alien Species (IAS) is one of the major treat for the marine biodiversity, aquaculture and fisheries activities, tourist industry and human health. Many alien species are transferred within marine ecosystems through the ballast water transported during commercial shipping operations and hull fouling. The world's busiest international shipping lanes or the sea lines of communications (SLOC's) as popularly known by seafarers pass through the Southern coast of Sri Lanka. Moreover the west coast of Sri Lanka receives a vast amount of debris though currents floating across Gulf of Mannar and the Arabian Sea. Although there is a huge increase in shipping activities during recent years, the country is lacking information regarding not only IAS but also highly needed baseline data in the marine environment of Sri Lanka.

The study was carried out to identify native species, species that may have been introduced and also to investigate the globally known marine invasive species in the proposed study area. Biological baseline survey was carried out to gather baseline information mainly targeting the native fauna and possible invasions and also physical and chemical characteristics of the selected sites in Hikkaduwa to Dikowita. Three fishery harbors (Dickovita, Hikkaduwa and Beruwala) and two coral reefs (Hikkaduwa and Barbarian) were selected from Southern coast of Sri Lanka. Sampling and observations were conducted for phytoplankton, zooplankton, mobile and sessile fauna, and hard substrate organisms and identified to the nearest possible taxonomic level using standard identification guides and keys. In Dickovita fishery harbour; 23 zooplankton, 23 phytoplankton, 14 fish species, 2 invertebrates, 15 molluscan species, 1 barnacle species, 4 algae species and 6 macrobenthos were recorded. In Beruwala fishery harbour; 25 zooplankton, 17 phytoplankton, 8 fish species, 4 invertebrates, 17 molluscan species, 4 barnacle species, 7 algae species and 7 macrobenthos were recorded, and in the Barbarian reef 19 zooplankton, 17 phytoplankton, 31 fish species, 2 invertebrates, 11 molluscan species, 2 sea grass species, 17 algae species and 4 macrobenthos were recorded. Hikkaduwa fishery harbour recorded 15 zooplankton, 19 phytoplankton, 10 fish species, 2 invertebrates, 8 molluscan species, 1 barnacle species, 5 algae species and 2 macrobenthos and in the hikkaduwa reef 18 zooplankton,

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30 fish species, 2 invertebrates, 7 molluscan species, 1 algae species and 10 macrobenthos were recorded. Among the recorded species 4 globally known invasive species (1 barnacle species and 3 mollusk species) were recorded. They were Eastern oyster (*Crassostrea virginica*), Australian acorn barnacles (*Eliminus modestus*), Hooded oyster (*Saccostrea cucullata*) and Common periwinkle (*Littorina littorea*). Although globally known invasive species were recorded in Sri Lankan waters, their invasiveness in Sri Lanka had not been studied yet to determine their invasive status or pattern making it difficult to understand their potential threats.

Key words: *Marine Invasive Species, Sri Lanka, Base line study*