

SACON Project Report # PR-240

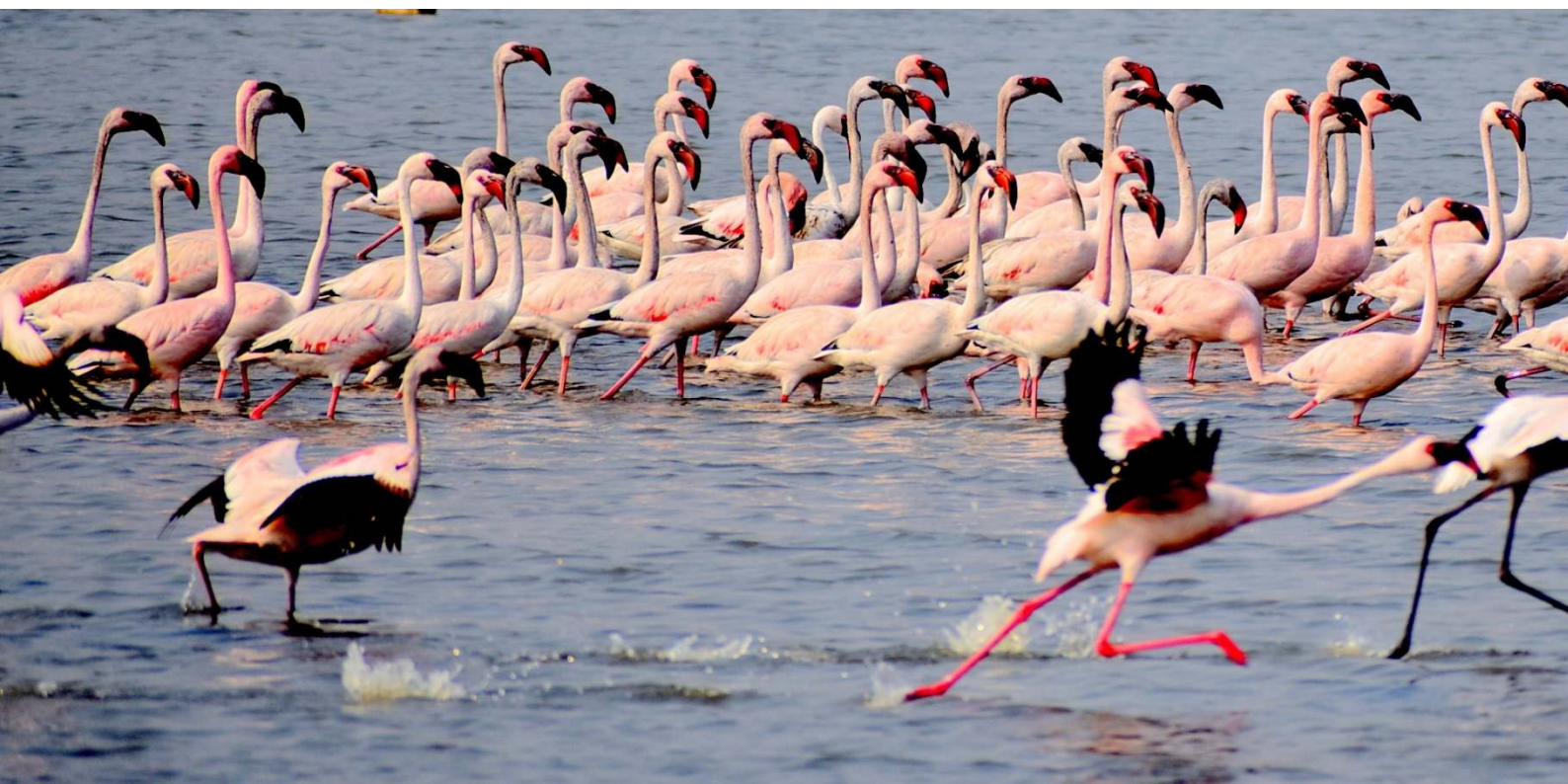
**MONITORING OF AVIFAUNA FOR THE AREAS OF SEWRI,  
THANE CREEK AND ADJOINING REGION AS PART OF  
ENVIRONMENTAL MONITORING PROGRAMME**

**Final Report**

*Submitted to*  
Mumbai Port Authority

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## **EXECUTIVE SUMMARY**

Coastal ecosystem services and their economic benefits are crucially important for people and associated biodiversity. Approximately 60% of the world's human population lives in coastal areas. The increased anthropogenic pressure on coastal ecosystems is threatening several coastal habitats, and species dependent on it. Dredging is a major human intervention that affects the coastal systems. The process involves extracting sediment from the bed of sea, estuaries, streams, and rivers and depositing it in a new location. Besides its applications, the precise effects of dredging on the ecology of marine biodiversity is largely unknown.

Mumbai Port Trust currently operates the Second Chemical Berth (SCB) at Pir-Pau in Mumbai. The Mumbai Port altered the dimensions of the Approach Channel and berth Pocket at SCB by increasing its depth and width to enable the port to accommodate bigger ships that call on the port. The Expert Appraisal Committee (EAC) of MoEFCC while granting the environmental clearance to the deepening work at Pir-Pau had stipulated certain conditions including the monitoring of avifauna for the areas of Sewri, Thane Creek and adjoining region by Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore. In this context, the Mumbai Port Authority engaged SACON for the monitoring of the Avifauna in and around the dredged areas.

We conducted an initial reconnaissance survey in Sewri and adjoining areas of Mumbai in 2022 March and identified five potential habitats for waterbirds in the region such as mudflats, mangroves and man-modified areas for further intensive monitoring. This included three natural and two man-modified habitats along Sewri and Thane Creek at varying distances from the dredged area. Systematic intensive field surveys were conducted between May 2022 and January 2023 in all the selected sites. A total of 151 bird species belonging to 19 orders and 53 families were recorded during the study. Out of this, 96 were resident birds and 55 were winter migrants. Nine globally threatened species were also recorded including the endangered Great Knot. The birds observed in the area were broadly categorised into shorebirds (Small

waders), large waders and gulls and terns. Among the shorebirds Lesser Sand Plover, Little Stint and Curlew sandpipers were most abundant. Flamingos were being most dominant among large waders followed by egrets and herons. Among Gulls and Terns, the Brown-headed Gull and Gull-billed Tern were most common and abundant in the study area.

Inside the Creek, bird species richness and abundance were low at the site close to the dredged area. Species number and abundance showed an increasing trend along the distance gradient from the Pir-Pau site. The species composition of birds showed significant differences between natural and man-modified habitats. Several bird species used Bhandup saltpans and Chanakya aquaculture ponds as high tide roost sites. Flamingos showed distinctive distribution patterns recording their peak abundance in December and January months from Ulwe and Chanakya mudflats respectively.

The Creek is being an open system subjected to various dynamic changes and threats continuously caused by natural and anthropogenic sources. It is other impossible to delineate the impact of any single short-term activity such as the deepening of an approach channel on the local avifaunal assemblages. However, regular monitoring of bird assemblages following the protocols and study sites established during the present study can be used for long-term monitoring and appropriate environmental and management interventions based on the changes and patterns observed.