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The urban marine environment of Singapore

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21 **Abstract:**

22 The island Republic of Singapore lies on the nexus between the Pacific and Indian Oceans, in the
23 equatorial tropics of the South China Sea. With her strategic geographic location and natural harbour,
24 Singapore has grown into a major global transshipment hub, with an estimated 130,000 vessel arrivals
25 per year navigating within 600 km² of sea space. The coastal environment around Singapore has also
26 changed dramatically over the last 50 years as a result of ambitious urban coastal development
27 projects to accommodate aspirations of a population of 5.54 million people settled within a land area
28 of 718.3 km². This paper provides a review of the physical environment of the marine waters around
29 Singapore. As characteristic of urban coastal cities, anthropogenic sources of contaminants have been
30 reported in the coastal environment. Overall, patterns of environment contamination reflect the
31 changing social and economic activity, and evolving awareness of environment impacts of different
32 pollutants. Early studies consisted of spatially and temporally limited sampling efforts which were not
33 always informative of causative factors. However, recent introduction of advanced chemical detection
34 tools and high resolution hydrodynamic modelling has opened the door for new studies to revisit and
35 understand the dynamic nature of our physical environment.

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