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# Waves take away big slice of Tamil Nadu coastline: Report

*2 districts risk losing 60% of coastline, while beaches in 5 southern districts are also in danger, according to satellite data-based study*



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Scientists say the estimated land loss due to erosion between 1990 and 2018 in Kancheepuram is around 186 hectares.

(Photo | Ashwin Prasath, EPS)

**By S V Krishna Chiatanya**

Express News Service

CHENNAI: As the Bay of Bengal continues to swallow huge swathes of land once part of the seashore and pristine beaches on India's east coast, Tamil Nadu is among the worst affected states. It has 'permanently' lost 1,802 hectares of inland area to the gigantic sea waves at 22 locations, identified as 'erosion hotspots', according to

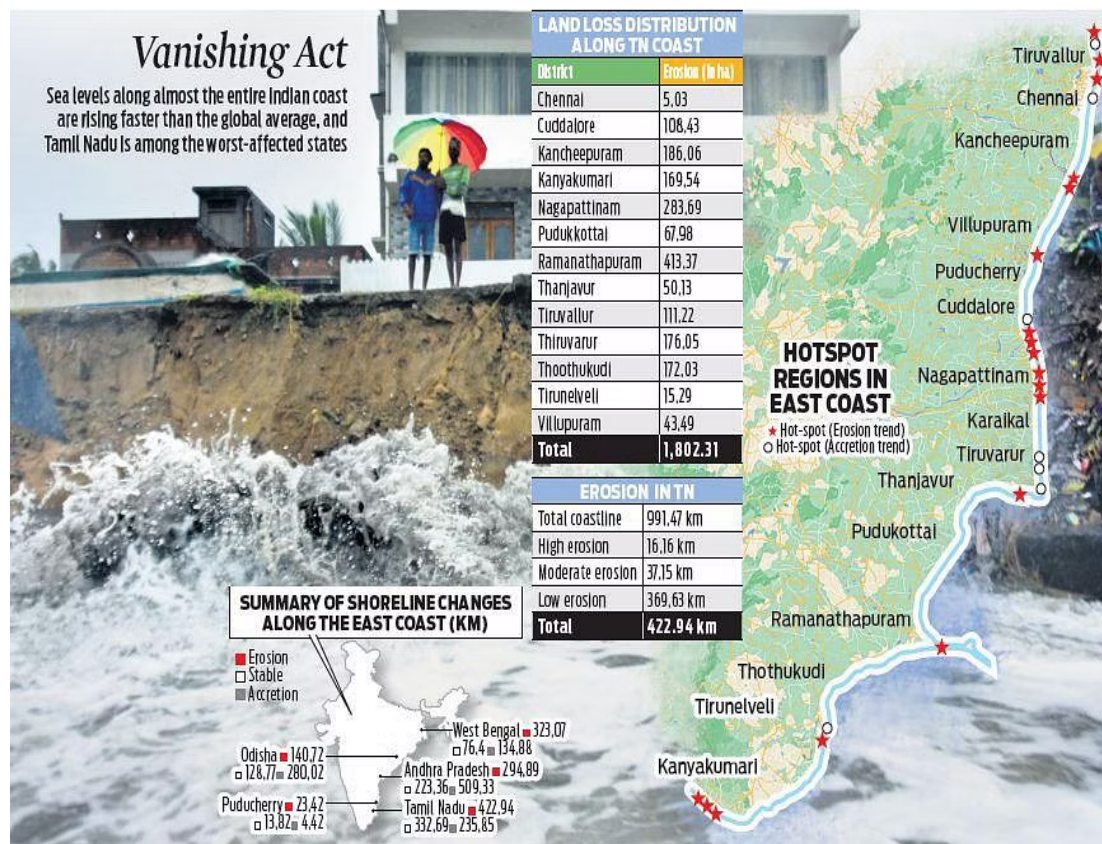
the latest shoreline changes assessment report by the National Centre for Coastal Research (NCCR), an arm of Ministry of Earth Sciences.

Some of these hotspots where long tracts of seashore that have vanished are located near Chennai. Districts such as Tiruvallur and Kancheepuram have about eight such locations out of the total 22. A deeper analysis of the NCCR study, which was based on satellite data acquired from 1990 to 2018, paints a grim picture: nearly 60% of the 125 km of coastline of these two districts is facing an immense loss of land. In Kancheepuram, 51 km out of 84.41 km of the coast is facing an onslaught of the sea while 18 km out of 40.97 km in Tiruvallur is under threat.

Experts are dismayed at the pace at which the beaches are doing a Houdini act. Protecting the beaches in this region is crucial as districts such as Kancheepuram are boosted with freshwater coastal aquifers that are critical for the region's water security. Chennai's 20% drinking water requirement is met by groundwater.

L Elango, professor and head of Department of Geology at Anna University, told this newspaper that coastal aquifers have become vulnerable. "Tamil Nadu is lucky to have nice quaternary sandy deposits all along its coast. The narrow strip of beach between Buckingham Canal and sea from Thiruvannamiyur in Chennai till Puducherry is an excellent freshwater aquifer sucking and holding almost 60-70% of rainfall. Erosion would trigger seawater intrusion that would adversely its functionality."

Scientists say the estimated land loss due to erosion between 1990 and 2018 in Kancheepuram is around 186 hectares. The NCCR officials said satellite imagery up to 2022 has been acquired and the study will be updated after geo-processing the shorelines. In Tamil Nadu, the delta and southern districts like Nagapattinam, Thiruvarur, Ramanathapuram, Thoothukudi and Kanyakumari are also losing precious beaches. Ramanathapuram has lost 413 hectares of beach area, highest in the state.



## What is the cause?

Sea levels along almost the entire Indian coast are rising faster than the global average, according to the World Meteorological Organization's State of the Global Climate in 2021 report, which was released on May 18, 2022. In India, the east coast is exposed to high erosion hotspots compared to the west coast. The shoreline assessment report says the area under erosion is increasing 3 metres per year in east coast and 2.5 metres per year in west coast. The reason for the problem is multi-fold. Climate change is causing sea levels to rise and triggering extreme weather events, which lead to natural erosion. This apart, the anthropogenic activities like construction of ports, dams and anti-erosion hard structures have aggravated or shift the problem to new areas.

NCCR director MV Ramana Murthy said the erosion in north coastal districts of TN is due to sediment imbalance. "Climate change-induced sea level rise and extreme weather events are a major factor. Besides, the littoral drift, which is sand coming from delta region has significantly reduced after several dams were constructed and hard structures like ports breakwaters and groynes were built. To minimise the

impact, it is important that we maintain the sand budget correctly. One thing that can be done is use the dredged sand from ports for the beach nourishment in eroding stretches, rather than dumping it in the deep sea.”

Erosion in delta and southern coastal districts was also partly due to change in monsoon cycle, according to him. Supriya Sahu, additional chief secretary, environment, forests and climate change, said the state government through its Tamil Nadu Climate Change Mission will undertake measures to address the problem. “We will carry out massive palmyra planting on vulnerable stretches. These trees act as bio-shield, preventing soil erosion and increasing mangrove cover.” She said the option of using dredged sand from ports will also be explored.

Green activists believe the problem is human-induced, and blame it on the ports and breakwaters. “Erosion makes local communities vulnerable to cyclonic storms, and salinity intrusion threatens agricultural and groundwater security. What the government calls development (ports) and erosion control (groynes and breakwaters) make a bad situation worse,” says Chennai-based environmentalist Nityanand Jayaraman.

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