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# Mumbai at far greater risk from rising sea than earlier projected

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Kurla (W) during the 2019 monsoon

How badly will Mumbai be affected by sea level rise caused by global warming? New research suggests that a much larger swathe of the city—and thus many more million people—will be affected by flooding and sea level rise than previously believed.

By 2050, the new study suggests, the entire island city and large parts of the suburbs and the region will be at risk of

annual flooding from sea level rise. Unless, as the study points out, carbon emissions are slashed, global warming slows, and preventative measures such as coastal buffers are taken to reduce vulnerability.

## 'CITY WILL BE UNLIVABLE'

- > Entire island city & large parts of suburbs face risk of annual flooding
- > New data shows parts of coastlines are far lower than previously thought
- > Says climate action like cutting carbon emissions can help reduce risk
- > Revisit Coastal Road, Shivaji statue plans, say activists
- > Across India alone, 36 million people face risk of flooding & inundation
- > The rising sea levels can hit drinking water facilities, power and internet hard
- > But mangroves, sea walls & marshes could help tackle the issue
- > Worldwide, China could be one of the worst affected; Bangladesh, Thailand, Vietnam & Indonesia too to be hit



Previous studies have not shown such widespread risk for Mumbai. Earlier research reported on by this paper have shown that areas along the Thane creek, the neighbourhoods around the city's rivers, as well as the exurbs of Thane, Bhiwandi, and Mira-Bhayander were at high risk of extreme flooding. But the new study by [Climate Central](#), a US-based group, suggests rising sea levels will bring annual floods to most of the island city as well in the next 30 years, with parts of the region at risk of complete inundation by 2100.

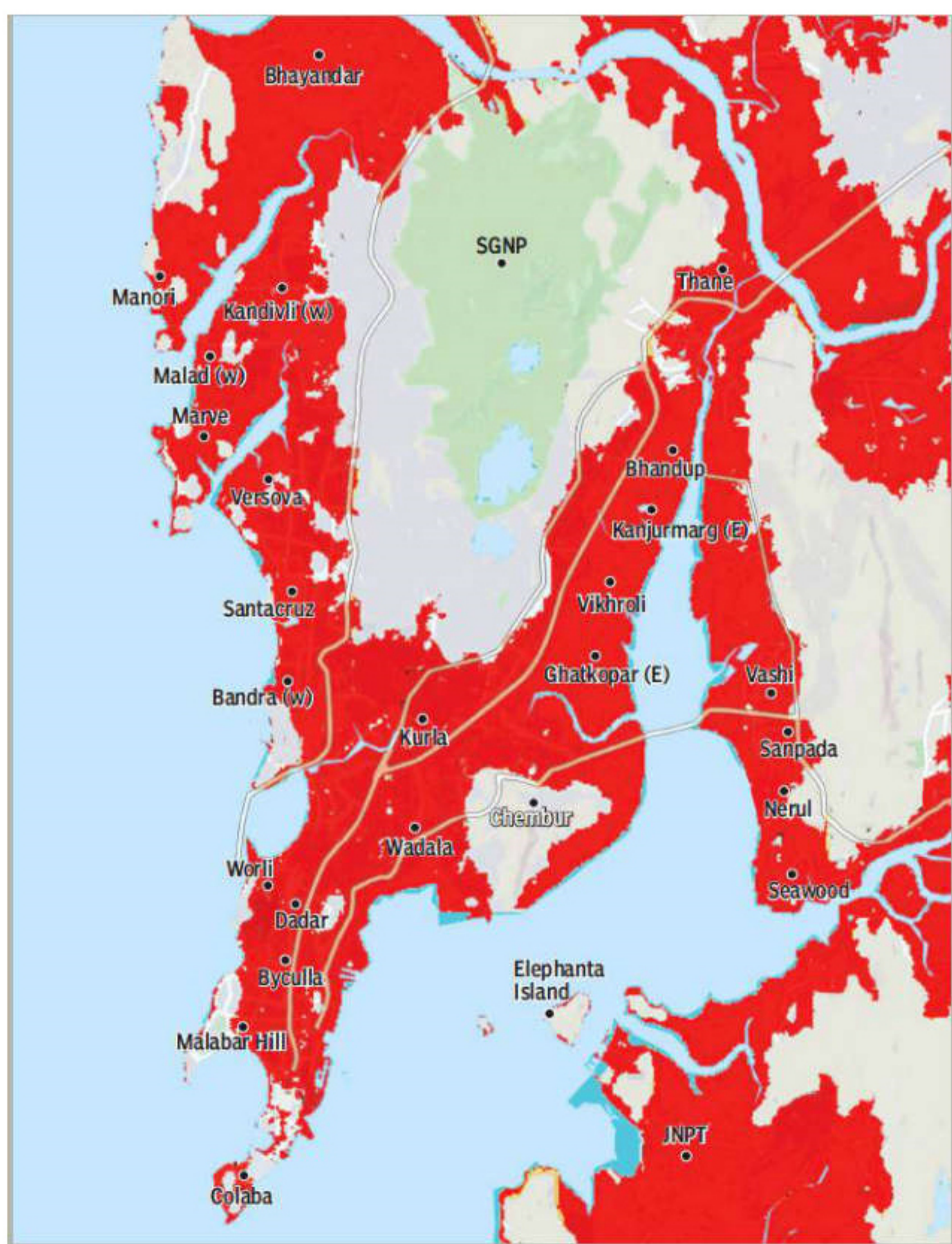
The elevated risk projections are due to a new more sophisticated tool used to assess land elevation that showed many parts of the world's coastlines are far lower than previously thought.

The study adds to a slew of recent literature highlighting the risk that [climate change](#) poses to coastal Indian cities, especially Mumbai—risks that environmentalists say is not being taken seriously.

### Climate study sounds red alert for city

The latest estimates by US-based Climate Central suggesting a far greater impact on Mumbai due to sea level rise raises questions about the gaps in planning for such an eventuality. "Climate change is not being factored in when decisions are made," said Debi Goenka of Conservation Action Trust. "Projects like the coastal road, Shivaji statue are at great risk, perhaps even the underground Metro, but we are not asking questions about which projects we should be building."

Although the study does not show that Mumbai will be totally submerged by 2050, as some media have mistakenly reported, Goenka notes that frequent flooding of the entire city will cause enormous damage. "What we see now in some parts and occasionally, we will see everywhere: sewer water backed up, infrastructure damaged," he said. "For all practical purposes, the city will be unlivable," he added.



### 2050 NEW ESTIMATE

The study is a global one which limits the level of detail available for local areas. However, an interactive map that comes with the new research helps bring out the kind of impact cities around the world might see under different climate change scenarios.

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*BMC please put your 30K Crore budget to some good use like this!*

Manu

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These projections hold for a scenario in which only moderate cuts are made to carbon emissions. If carbon emissions do not fall, temperatures could rise more rapidly, and with them sea levels. However, under every scenario, Mumbai, along with Kolkata, would be among the most affected globally, according to the map.


Some experts questioned the findings. Pushpendra Johari of RMSI, a global natural hazard consultancy, said the numbers seemed on the high side for India and Mumbai. Other studies, which take into account the limitations of the old land elevation datasets, do not show such high risk, he said. Others also noted that the study does not take into account regional factors. There are other limitations—protective infrastructure is not taken into account in calculating exposure and impact, for instance, which the study acknowledges.

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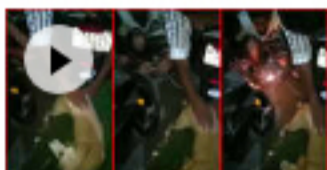
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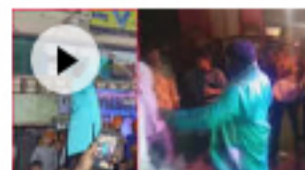
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