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# A new study analysed deaths caused by lightning in Bihar, here's what it found

Sheohar, Banka, Kaimur and Kishanganj districts were the most vulnerable in Bihar, recording the highest casualty rate for lightning per million population

Written by **Nikhil Ghanekar**

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Researchers explained that lightning strikes reach a record high in June and July with the monsoonal current setting in, mainly due to the interplay of easterly and westerly winds. (Representational/Canva Image)

A new study of lightning-related deaths in Bihar has revealed that Sheohar, Banka, Kaimur and Kishanganj districts were the most vulnerable in the state to this natural hazard, recording the highest casualty rate per million population. The study examined data from the 2017-2022 period and found that 1,624 people died and 286 were injured due to lightning.

Nearly all the 1,624 deaths were in rural areas and most of these casualties and injuries, about 76.8 per cent, were caused by lightning strikes that occurred between 12:30 pm and 6:30 pm, the study noted.

The study identified gender-segregated data for 1,577 deaths. Out of these 1,577 deaths, 1,131 (71 per cent) were men. Rural men between the age groups of 11-15 years and 41-45 years were particularly vulnerable as per the study by IMD scientists.

On average, there were 271 human deaths and 57.2 injuries due to lightning strikes each year in Bihar during the six-year study period. The state's annual casualty rate per million of 2.65 was higher than the national average of 2.55, the study said. The

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Cloud-to-ground lightning strikes claim thousands of lives each year and Bihar ranks among the top three most-affected states in terms of lightning-linked casualties along with [Madhya Pradesh](#) and [Uttar Pradesh](#), data shared by the Earth Sciences Ministry in Parliament shows.

The plains area is prone to thunderstorms and lightning activity as warm, dry air from north-west India converges with moist air emanating from the Bay of Bengal, creating conditions that are favourable for the formation of deep convective clouds, the study said.

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The eastern state, much of which lies in the Indo-Gangetic plains, spends Rs 12-15 crore each year on compensation payouts to families of those killed or injured by lightning strikes, as per the study. The state's disaster [budget](#) is approximately Rs 300 crore, with a significant amount spent on ex gratia payments, the study added.

One of the more nuanced aspects of vulnerabilities found during the study was the higher impact of lightning strikes in districts with higher population density, said lead author Anand Shankar, an IMD scientist from the Patna Meteorological Centre.

These parts of Bihar are not equipped with any lightning protection devices around farm areas. Socio-economic factors play an important role in mitigating the impact of such natural hazards," he said. Shankar added that the timing of the lightning strikes and the corresponding casualties are in line with global findings. This is because most thunderstorm activity takes place in the afternoon, he said.

The study's co-author Vivek Sinha, a senior scientist from IMD [Delhi](#), said that the threat potential of lightning strikes is not uniform. Topography, elevation, and local meteorological factors determine the spatial distribution of lightning strikes.

A higher lightning frequency is seen in the eastern region owing to higher moisture incursion, the study said.

Sinha said that assessing vulnerability and hotspots is important for policymakers and to design mitigation measures. "Awareness has to increase. This kind of vulnerability mapping can provide a template to change the operational side of disaster management," Sinha said.

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**Nikhil Ghanekar**

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