# Climate-driven rat explosion intensifies urban infestations across the globe



One morning last year, John Gladwin, a father of five from Croydon, was startled to discover that a bag of soil stored under his kitchen sink had been shredded, accompanied by an unmistakable musty smell. Soon after, he heard rats scurrying inside his home—behind cupboards and under the bath. His response was swift, using peppermint oil and rat poison, which so far has kept the rodents at bay. However, the experience left him worried about his children’s health and burdened with a sense of shame. His property, like many others, was part of an escalating rat infestation problem sweeping across urban areas in the UK and beyond.

Pest control companies such as Cleankill, which serves the south of England, have witnessed a striking rise in rat-related callouts, with estimates suggesting a 20% increase over the last two years. The British Pest Control Association has noted that more than half its members have reported growing rat problems in the past five years. Although precise rat population numbers are challenging to ascertain because these animals dwell in nocturnal sewers and burrows, estimates in the UK range widely—from 10 million up to 120 million. Local councils have recorded over half a million rat infestations reported between 2023 and mid-2024, underscoring the scale of the issue.

This surge is not confined to the UK. Cities across the globe—from Washington D.C., San Francisco, New York City, and Toronto to Amsterdam—are similarly experiencing sharp increases in rat activity. These rodents, often living in filthy environments, are more than a nuisance; they pose significant public health risks by spreading diseases such as leptospirosis (Weil's disease) and hantavirus. Beyond health, their ability to damage food supplies compounds the urgency of the problem.

Experts studying this phenomenon attribute the upsurge in rat populations to multiple factors, including increasing urbanisation, changes in waste management, and disruptions caused by road and building works. Significantly, recent scientific research points to rising temperatures, driven by climate change, as a critical driver. Urban rodentologist Dr Bobby Corrigan, who has dedicated his career to understanding rat behaviour, believes warmer winters particularly favour rat population growth, since cold temperatures typically limit their reproduction by causing higher mortality rates and fewer offspring.

A pivotal study published in the journal Science Advances analysed rat complaint data from sixteen cities worldwide over periods ranging from seven to seventeen years. The findings showed significant increases in rat activity in eleven cities—Washington D.C. experienced nearly a 400% rise, San Francisco 300%, Toronto 180%, and New York City 160%. Cities undergoing more substantial warming saw more pronounced increases in rat populations. The study highlights the “perfect storm” of climate change creating favourable conditions for rats to thrive longer and reproduce more, while cities themselves, with their heat-retaining infrastructure and dense populations, provide ample habitat and food sources.

Rats are prolific breeders, with females capable of producing six litters annually, each with up to a dozen pups. Given they start breeding at around nine weeks old, a pair of rats could theoretically generate over a thousand offspring in a year. Urban environments exacerbate this growth by providing warmth, shelter, and abundant food sources from overflowing bins and discarded fast food. The phenomenon of "urban heat islands," where city surfaces trap heat, further promotes rat survival and breeding, reinforcing concerns that expanding urban populations will worsen infestations.

Adding to the difficulty of controlling rat populations is their behavioural adaptation. Despite the lethal nature of commonly used anticoagulant poisons, rats have developed genetic resistance to these toxins. Moreover, they exhibit neophobia—caution and fear of new objects—leading them to sample only small amounts of unfamiliar foods before deciding whether they are safe. This "superpower" of the rat helps them avoid baits that might harm them, making conventional pest control methods increasingly ineffective and raising questions about the humane alternatives such as oral contraceptives being explored by some researchers.

In New York City, the scale of the problem prompted the appointment of Kathleen Corradi as the city's "Rat Tsar" in 2023, with a $3.5 million budget to increase public awareness and implement measures to reduce rat populations. Corradi’s team has introduced public education initiatives, including “rat walks,” where residents learn about human behaviours contributing to infestations and the rats’ own behaviours. A key strategy has been mandating the use of rat-proof bins to cut off food sources, alongside encouraging residents to report sightings to facilitate swift responses by city inspectors, who can impose fines on non-compliant households.

Back in Croydon, pest controller Alex Donnovan faces the grim reality of a rat infestation growing out of control, partly due to the abundance of food from overflowing rubbish bins. He notes that even poison is often ignored by rats when alternative food sources are plentiful, demonstrating the challenge of managing infestations without addressing the root causes. The societal shifts toward fast food consumption, less frequent rubbish collection, and an ever-increasing urban population intensify the quandary.

The UK is projected by the Office for National Statistics to grow its population from 67.6 million in 2022 to 72.5 million by 2032, with an increasing share living in urban areas—a trend likely to compound rat problems if urban environments are not better managed. Experts argue that a focus on environmental cleanliness and waste control to deny rats their food sources might offer a more sustainable and humane path forward than relying solely on poisons. Dr Corrigan concludes that the surge in rat populations reflects our historical underestimation of these resilient creatures, and if urban planning and behaviour adjustments are not prioritized, the price we pay will continue to rise.

### 📌 Reference Map:

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1. <https://www.bbc.com/news/articles/c4gvk397j80o?at_medium=RSS&at_campaign=rss> - Please view link - unable to able to access data
2. <https://www.science.org/doi/10.1126/sciadv.ads6782> - A study published in Science Advances analysed rat-related complaints in 16 cities worldwide, finding that increasing temperatures due to climate change are creating a 'perfect rat storm' and allowing populations to flourish. The study concluded that as temperatures warm, cities risk becoming overrun by rats, with Washington D.C., San Francisco, Toronto, New York City, and Amsterdam experiencing the most significant increases. The research highlights the need for urban planning and waste management strategies to address this growing issue.
3. <https://www.cnn.com/2025/01/31/climate/rats-cities-temperature-increase/index.html> - CNN reports on a study published in Science Advances, which found that rising temperatures are contributing to increased rat populations in cities. The study analysed data from 16 cities and found significant increases in rat numbers in 11 of them, including Washington D.C., San Francisco, Toronto, New York City, and Amsterdam. The study links these increases to several factors, including high population densities and low amounts of urban vegetation, with the predominant influence being warmer average temperatures.
4. <https://www.cbsnews.com/news/rat-population-spike-in-cities-due-to-warming-temperatures/> - CBS News reports on a study published in Science Advances, which found that rat populations are spiking in cities due to warming temperatures. The study analysed public complaint and inspection data in 16 cities worldwide and found that 11 cities had significant increases in rat populations, with Washington D.C., San Francisco, Toronto, New York City, and Amsterdam experiencing the most significant growth. The study links these increases to factors such as urbanisation, higher human population density, and warmer temperatures.
5. <https://www.npr.org/2025/01/31/nx-s1-5279426/population-rats-climate-change-cities> - NPR reports on a study published in Science Advances, which found that warmer temperatures are helping rat populations grow in cities. The study analysed data from 16 cities and found that cities experiencing greater increases in average temperatures over time saw the largest growth in rat populations. The study also found that rapid urbanisation, especially the loss of green spaces, was strongly linked to faster rat population growth, and that higher human population density was positively associated with rat increases.
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7. <https://www.nationalgeographic.com/animals/article/cities-urban-rat-populations-warmer-climate> - National Geographic reports on a study published in Science Advances, which found that climate change is linked to a surge in urban rat populations. The study analysed data from 16 cities and found that 11 cities had significant increases in rat numbers, with Washington D.C., San Francisco, Toronto, New York City, and Amsterdam experiencing the most significant growth. The study suggests that warmer temperatures may allow rats to forage longer and reproduce more, leading to larger population sizes.