

War-damaged urban environment in Kharkiv is fatal for bats: Loss of roosts and lethal traps in destroyed buildings

August 8 2023



Common Noctule in a deadly trap in the inner city war zone in Ukraine. Credit: Anzhela But

Russia's war in the Ukraine has severe consequences not only for humans, it also has detrimental effects on populations of urban and semi-urban wildlife in the attacked cities and regions.

Scientists from the Ukrainian Bat Rehabilitation Center recently examined the effects of war-related damages to buildings on [urban populations](#) of one important and widespread bat species, the Common Noctule (*Nyctalus noctula*), in the city of Kharkiv in north-eastern Ukraine. Their findings have been published in the *Journal of Applied Animal Ethics Research*.

They showed that many buildings used by bats as roosts have been destroyed and approximately 7,000 bats were killed. In addition, partially destroyed buildings have become a death trap for bats, resulting in several thousand more victims.

The mission of the Ukrainian Bat Rehabilitation Center (UBRC) is to protect, rescue and conduct long-term research on bats, with the Kharkiv region as the focus of their efforts.

Kharkiv is Ukraine's second largest city and one of the places where conflicts between Ukrainian and Russian forces have been most intense to date. UBRC director Dr. Anton Vlaschenko, who is also affiliated with the Berlin-based Leibniz Institute for Zoo and Wildlife Research (Leibniz-IZW), says, "Our findings suggest that 45.1% of buildings used as wintering roosts for Common Noctules were either partially damaged or completely destroyed by shellings, which may have led to the direct killing of approximately 7,000 bats."

Additionally, the war-damaged [urban environment](#) in Kharkiv has become a deadly trap for the bats during the period of autumn migration or swarming. "Bats entered the interiors of buildings through windows that were left open or broken by blast waves, resulting in entrapment,"

says former Leibniz-IZW Ph.D. student Dr. Kseniia Kravchenko from the UBRC.

Windows left open by people and/or were broken by blast waves are a notable threat for migratory bats that enter the [building](#) and get trapped inside the apartments or between window frames. Some of the windows in the city are of an old double-glazed type—two frames with a space between them—and the bats end up trapped in the middle. "The issue has been known to occur in Kharkiv since the 1960s, but the war exacerbates the problem by creating ever more human-made traps for bats," reports Vlaschenko.

Before the war, UBRC scientists used to rescue up to 500 bats from such windows during the autumn bat migration. Owing to the war, the number of cases of bats trapped in partially damaged buildings and/or abandoned apartments was three times higher than in previous years. Almost all of them were Common Noctules.

The team reports that they discovered 2,836 Common Noctules trapped inside buildings damaged by shelling and that approximately 30% of them were already dead upon discovery. Noctules flies in groups and these groups can get lost in urban structures. "The size of trapped groups was clearly larger than in previous years, especially in the districts of the city most damaged by the ongoing war such as Saltivka," says Kravchenko.

During the first weeks of the full-scale war (February–March 2022) alone, almost half of the buildings known as winter roosts of Common Noctules were partially (31.4%) or fully (13.7%) damaged by Russian shelling, which may have led to the direct killing of thousands of bats.

The number of bats present in Kharkiv in 2022 was exceptional high, as Common Noctules stayed in the Kharkiv city area all autumn. The

scientists also found that these bats had a larger body mass than usual. These changes might have been a consequence of the destruction of street lights and power plants in Kharkiv and most of the settlements in Ukraine since the beginning of the war. The absence of artificial light might result in more bats entering the city, as this removed any "light barrier" for nocturnal animals and facilitated a rapid recovery of night-active insect populations.

The war has made their working condition extremely difficult, but the team of the Ukrainian Bat Rehabilitation Center remains very active and continues to save bats, gather data, run workshops and collaborate with many scientists and institutes in Ukraine and beyond, such as with the Leibniz-IZW.

More information: Anton Vlaschenko et al, The War-Damaged Urban Environment Becomes Deadly Trap for Bats: Case from Kharkiv City (NE Ukraine) in 2022, *Journal of Applied Animal Ethics Research* (2023). [DOI: 10.1163/25889567-bja10035](https://doi.org/10.1163/25889567-bja10035)

Provided by Leibniz-Institut für Zoo- und Wildtierforschung (IZW) im Forschungsverbund Berlin e.V.

Citation: War-damaged urban environment in Kharkiv is fatal for bats: Loss of roosts and lethal traps in destroyed buildings (2023, August 8) retrieved 27 April 2024 from <https://phys.org/news/2023-08-war-damaged-urban-environment-kharkiv-fatal.html>

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