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NEWS EUROPE

Rat poison threatens Italy's growing wolf population

More than half of dead wolves in study had been exposed to rodenticides

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A European gray wolf in Tuscany in Italy ANGELO GANDOLFI/NPL/MINDEN PICTURES

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Over the past few decades, Italy's growing population of wolves has begun to edge closer to urban areas, attracted in part by tasty prey such as rats and mice. But a recent study suggests city life carries a potentially deadly risk for the predators: eating rodents tainted with poison. Analyses of more than 180 wolf carcasses found in Central and Northern Italy revealed that nearly two-thirds tested positive for rodenticides, suggesting the chemicals pose a bigger threat to wolves than previously understood.

"The results were totally unexpected," says ecologist Jacopo Cerri of the University of Sassari, an author of the study. The findings also suggest Italian wolves "have a more complex ecology and diet than previously imagined," he says.

Over the past 40 years, researchers estimate the number of wolves in Italy has grown to more than 3000—a trend that has displeased some farmers and hunters who see the animals as a threat to livestock and game. Some wolves have moved into urban and semiurban areas, where they have learned to feast on a variety of rodents, including invasive coypu, or nutria, a wetland species introduced to Italy for its fur. But people often consider rodents to be pests and turn to chemical poisons, sometimes illegally, to kill them.

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Researchers have long known these rodenticides, including bromadiolone and brodifacoum, which can cause fatal internal bleeding, can quickly move up the food chain and accumulate in predators that are not the target. But researchers had not systematically studied whether the chemicals posed a threat to wolves in Italy and across Europe.

To start to fill that gap, a team of researchers from several universities and the Experimental Zooprophyllactic Institute of Lombardy and Emilia Romagna set out to find dead wolves and conduct toxicological examinations. The task was “far from easy” given the difficulty of locating carcasses and performing the complex testing, says veterinarian Carmela Musto of the University of Bologna, the lead author of the study. “It took a lot of teamwork, time, and energy.”

The results, [published online last month in *Science of the Total Environment*](#), revealed that the rodenticide threat could be “far higher than previously thought,” the authors write. Overall, 61.8% of 186 wolf carcasses recovered from 2018 to 2022 and tested carried traces of at least one poison, and 42% carried traces of two or more. The testing couldn’t reveal how a wolf had ingested the chemicals or whether they had caused its death. But some animals showed signs of internal bleeding, a hallmark of rodenticides. A statistical analysis indicated wolves living closer to urban areas faced a greater risk.

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“It’s a good study, with a decent sample size,” says biologist Sofi Hindmarch of the Fraser Valley Conservancy, who studies the effects of rodenticides on wildlife and was not involved in the study. The next step, she says, would be to “get a better understanding of the diet of the wolves in that region” so that researchers can “better understand the potential exposure pathways of rodenticides.”

Such studies shouldn’t be confined to Italy, the authors write, because “rodent control is common in many European countries.” In the meantime, they’d also like to see Italy’s local and national governments review rodent control laws, to ensure poisons are only used when wildlife-friendlier options, such as trapping, aren’t viable.

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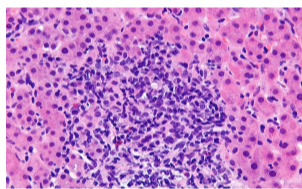
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