

A new variant of the rabbit hemorrhagic disease endangers the Iberian lynx

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A new variant of the rabbit hemorrhagic disease endangers the Iberian lynx: wild rabbit. Credit: Miguel Delibes-Mateos

A study led by the Hunting Resources Research Institute demonstrates the effects that a new variant of the hemorrhagic disease virus RHDV has on wild rabbits on the Iberian Peninsula. The virus threatens the survival of its predator, the Iberian lynx.

Scientists have identified a new variant of the rabbit hemorrhagic disease virus (RHDV) throughout the entire Iberian Peninsula, including the areas where the Iberian lynx lives, such as the Sierra Morena mountains.

A study published by the journal *Emerging Infectious Diseases* addresses the problem of this new outbreak of the virus for wild populations, which has caused a high number of mortalities on farms.

"Very little is still known about this new variant, so it is difficult to say whether it is more serious than the previous one. Nevertheless, a significant difference is that it affects very [young individuals](#),

ten or eleven days old, which was not happening before," declares Miguel Delibes-Mateos, co-author of the study by the Hunting Resources Research Institute (CSIC-UCLM-JCCM) to SINC. Scientist Delibes-Mateos currently works for the Centre for Research into Biodiversity and Genetic Resources (University of Porto) and the Institute for Advanced Social Sciences (CSIC).

This could harm the rounding up of young individuals and put their dynamics at risk. To date there is no study which specifically evaluates the mortality rate of wild rabbits in the countryside as a result of the new variant.

"The abundance of rabbit populations in some areas of Aragón and Doñana National Park decreased on average in 2013 by between 70% and 80% compared to the levels of the previous year," explains Delibes-Mateos.

Recent studies suggested that the new variant seems to be replacing the common disease virus. It is thought that currently the majority of the deaths caused by the hemorrhagic illness are due to the former.

The preferred prey of the low lynx population

The rabbit (*Oryctolagus cuniculus*) is considered a key multifunctional species of Iberian Mediterranean ecosystems, given that numerous species benefit from its presence.

"Any decline in wild rabbit populations, including that caused by diseases, poses a serious problem for the Iberian lynx. This feline is somewhat of a rabbit specialist and needs a certain abundance of its main prey to be able to establish its territories and reproduce," the researcher emphasises.

The decrease in the abundance of rabbits has been accompanied by a notable drop in the number of Iberian lynx cubs born in the wild between 2012 (78

cubs) and 2013 (54 cubs), according to data from the Regional Government of Andalusia and the 'Life-Lince' Project.

The small mammalian lagomorph disperses the seeds of dozens of plant species, their warrens shelter a high number of vertebrates and invertebrates, their droppings feed different beetles and provide the soil with nutrients, and they are very important for many Iberian predators.

Therefore, if they decline (as has happened recently) it can affect many elements of ecosystems and not only predators.

"In our study we present the data on two rabbit monitoring programmes in Aragón and Doñana. In both cases a marked decline was observed in the abundance of rabbits (70%-80%) after the appearance of this new variant of the hemorrhagic disease virus. It seems logical to think that there is a link between this new variant and the recent decline in rabbits, although more detailed analyses are needed," Delibes-Mateos points out.

Data from the two monitoring programmes is based on rabbit sightings on routes that are systematically revisited over time.

Right now little is known about the new variant, so it is difficult to say how it could be stopped.

"However, if we took as reference what happened with the original disease virus in the nineties, we could suppose that the healthiest populations will survive the disease more successfully. From this point of view, suitable management of the populations, favouring higher densities, could mitigate its impact," he concludes.

More information: Delibes-Mateos M, Ferreira C, Carro F, Escudero MA, Gortázar C. "Ecosystem effects of variant rabbit hemorrhagic disease virus, Iberian Peninsula". *Emerg Infect Dis*. [dx.doi.org/10.3201/eid2012.140517](https://doi.org/10.3201/eid2012.140517)

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