

Bovine tuberculosis in wildlife threatens endangered lynx and cattle health

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In an epidemiological survey of Spain's Doñana National Park, the findings of which are published on July 23 in the journal *PLoS ONE*, Christian Gortázar and colleagues studied the prevalence of bovine tuberculosis (bovine TB) infection among populations of wild boar, red deer and fallow deer in the national park, which is located in southern Spain. The researchers suggest that the results can be used to investigate bovine TB transmission dynamics between and within each species and to extrapolate the implications for spill-over to domestic cattle and wildlife management policies.

The Doñana National Park is a UNESCO Biosphere Reserve where commercial hunting and artificial wildlife feeding do not take place and traditional cattle husbandry still exists. Deaths of the highly endangered Iberian lynx due to bovine TB have been recorded in this area, and annual cattle bovine TB reactor rates have increased despite compulsory testing and culling.

In this study, Christian Gortázar and colleagues analysed the European wild boar, the red deer and the fallow deer for bovine TB. The infection was confirmed in 52% of wild boar, 27% of red deer and 18% of fallow deer. The prevalence recorded in this study is among the highest reported in wildlife. Remarkably, this high prevalence occurs in the absence of artificial wildlife feeding, which suggests that a feeding ban alone would have a limited effect on the prevalence of bovine TB among the wildlife.

The results highlight the need to consider the potential effects on wildlife when controlling bovine TB in cattle and strongly suggest that bovine TB may have big effects on wild animal welfare and conservation.

Gortázar and colleagues make several recommendations, which may help to control the spread of the infection, all of which must be addressed in parallel with studies elucidating the ecological impact of bovine TB in Doñana National Park wildlife.

Firstly, the researchers propose the continuation of park-wide monitoring activities, with special emphasis on the cattle-free northern third of the park to better understand the disease dynamics and risks. Secondly, they recommend the implementation of ad hoc surveillance of the bovine TB infection in all the possible species which could play a role in TB epidemiology. The researchers also suggest that identifying and culling animals with advanced bovine TB could reduce the number of super-shedders and the availability of contagious carrion. Finally, the scientists note that the future evaluation of new vaccine candidates and the investigation on genetic markers for resistance to intracellular bacteria may also help to control the infection.

Citation: Gortázar C, Torres MJ, Vicente J, Acevedo P, Reglero M, et al. (2008) Bovine Tuberculosis in Doñana Biosphere Reserve: The Role of Wild Ungulates as Disease Reservoirs in the Last Iberian Lynx Strongholds. PLoS ONE 3(7): e2776. doi:10.1371/journal.pone.0002776
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