

Study finds a growing appreciation of the benefits provided by hoofed animals

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The benefits to humans most commonly associated with wild ungulates—such as deer, hippos, wild boar, or giraffes—are hunting (and the food-source it represents for many communities) and their aesthetic value. This is one of the conclusions of a scientific literature review led by researchers from the Ecology Area of the Miguel

Hernández University of Elche (MHU), in which scientists from the University of Granada (UGR) also participated. In the study, the benefits and detriments associated with wild ungulates were studied on a global scale.

Wild hoofed animals or ungulates are becoming increasingly prolific and more widely distributed throughout Europe and North America. They are also recolonizing many areas where they once had a strong presence—decades or even centuries ago—and from which they were eradicated. By contrast, in Africa and Asia, ungulate populations are suffering significant decline due to land use for human expansion. According to the study, for these reasons, there is more and more interaction between ungulates and people. Some aspects of this mutual interaction are positive and others negative. To assess this scenario, the researchers analyzed 575 [scientific articles](#) to determine which benefits and detriments generated by wild ungulates were discussed in scientific publications between 2000 and 2019.

Among the human-wildlife conflicts mentioned in scientific publications, damage to agriculture, silviculture, and natural vegetation stand out in particular, as well as traffic collisions. According to the researchers, since the beginning of the 21st century, the number of annual publications on wild ungulates and their interaction with people has risen. So has the number of benefits that have been examined in scientific publications (mentioned in 50.3% of the publications included in the literature review), despite the fact that the majority of publications center on the conflicts with humans generated by ungulates (which appear in 93.7% of the cases analyzed).

From this analysis of [scientific publications](#), seven research clusters related to wild ungulates were identified, dealing with: herbivory and [natural vegetation](#); silvicultural damage in Eurasia; agricultural damage in Mediterranean agro-ecosystems; agricultural damage in North

America; conflicts in urban areas of North America; natural American Northwest areas; and social research in Africa and Asia.

In Europe and North America

These primary research clusters are centered mainly in Europe and North America, with five of them focusing on these parts of the world (accounting for 70.6% of the publications analyzed). This is despite the fact that only 7% of ungulates inhabit Europe and North America, suggesting that there is a clear geographical bias in the investigation of these species. The one line of research that is being conducted in developing countries (Africa and Asia) includes [social aspects](#) in its studies that encourage coexistence with wild ungulates and their conservation. It is also the line of research that most clearly highlights the benefits associated with wild ungulates.

In their conclusions, the Spanish researchers point out that despite the negative aspects traditionally associated with wild ungulates, in recent years the benefits that they can also contribute to socio-ecological systems—such as tourism or the maintenance of habitats—have become more evident. They observe that the interactions between humans and wild ungulates require significant cooperation between the different social agents involved (managers, conservationists, hunters, or farmers), and will do so to an even greater degree in the future. Here, it is critical to implement management measures that support the coexistence of wildlife and people. In view of the results of the present study, the researchers consider that the scientific perspective should take into account all aspects of wild ungulates (both positive and negative) relative to the functioning of ecosystems—which, in most cases, have been transformed by humans—if this coexistence is to be facilitated.

The multidisciplinary team that conducted this study comprises researchers from the Ecology area of MHU in collaboration with

researchers from Spain's Institute for Game and Wildlife Research (IREC-CSIC, UCLM, JCCM), the University of Alicante, the University of Granada, and the Complutense University of Madrid, and international centres including the Institute of Nature Conservation Polish Academy of Sciences (Poland), WWF-US (United States), University of British Columbia (Canada), and Leuphana University Lüneburg (Germany).

More information: Roberto Pascual-Rico et al, Usually hated, sometimes loved: A review of wild ungulates' contributions to people, *Science of The Total Environment* (2021). [DOI: 10.1016/j.scitotenv.2021.149652](https://doi.org/10.1016/j.scitotenv.2021.149652)

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