

PRESS RELEASE

The Iberian pear faces a conservation paradox that could cause its extinction in Doñana

- A study, led by the Doñana Biological Station reveals high mortality rates of the Iberian pear, a small tree endemic to the Iberian Peninsula and North Africa, over the last two decades
- Despite the rigorous regularization of land use in the Doñana National Park, high densities of herbivores, together with the overexploitation of aquifers and long droughts, exacerbate the decline of the Iberian pear.



Iberian pear in poor state of conservation in the Doñana Biological Reserve. Credit: Carlos Ruiz / EBD-CSIC

Sevilla, 17 de junio de 2026. A new study, led by the Doñana Biological Station (EBD-CSIC) shows a generalized decline of the Iberian pear (*Pyrus bourgaeana*) in Doñana despite the strict protection provided by the National Park. The study, published in the journal *Biological Conservation*, describes a “conservation paradox”. Although the law prevents land use change, it also exerts an overprotection of herbivores that feed on the tree. This situation is aggravated by the overexploitation of aquifers and prolonged droughts that prevent their regeneration and pushes this species towards local extinction.

A silent extinction

The unnoticed disappearance of species before their absence becomes evident is increasingly emerging as a major driver of biodiversity loss. Small and lesser-known tree species are particularly vulnerable to this phenomenon. “Although national parks and other protected areas are typically established to conserve biodiversity, their management practices can unintentionally have contrasting effects on different components of the ecosystem,” explains José María Fedriani, researcher at the Doñana Biological Station (CSIC).

To exemplify this situation, the researchers chose the Iberian pear, a small delicious tree endemic to the Iberian Peninsula and North Africa. They conducted detailed demographic monitoring over two decades in five populations of this species, two within the Doñana National Park and three outside.

The results revealed cause for concern. The results revealed a concerning pattern. More than 350 pear seedlings (individuals in the early post-germination stage) were recorded; however, their survival rate remained consistently very low across all populations. The causes of mortality varied by location. Within the National Park, herbivory was the main driver of mortality, whereas outside the park desiccation and agricultural tillage were the predominant factors. The researchers also identified nearly 2,540 saplings (the developmental stage following the seedling phase). Herbivory damage was most severe in the populations located within the park and in Hinojos, where browsing and trampling levels were highest.

The threat of herbivores and drought

The findings paint a worrying demographic picture for the species in the region. Ungulates, particularly deer and wild boar, not only feed on seedlings and young trees but also consume and destroy a large proportion of the fruit produced within the National Park, drastically reducing the number of seeds available for dispersal.

Although ungulates have inhabited Doñana for centuries, their populations have increased substantially in recent decades. According to the researchers, this rise is likely linked to the decline or local extinction of natural predators such as the wolf (*Canis lupus*). At the same time, in some areas, declines in fox and badger populations, the main seed dispersers of the wild pear, have further restricted seed dispersal.

Climate change, groundwater overexploitation and increasingly severe summer droughts are also exacerbating the species’ regeneration failure. The Doñana aquifer is currently under critical pressure as a result of intensive agricultural irrigation and water supply demands from tourist and residential developments. The study found that in the area of Matasgordas, mortality among reproductive individuals exceeded 60% over the past two decades, a trend that coincides with the dramatic decline in groundwater levels in the northern part of the National Park due to both legal and illegal water extraction.

Protection does not guarantee conservation

Given the vulnerability of wild pear populations in Doñana, the research team proposes a range of active conservation measures. Ensuring the sustainable use of groundwater resources and monitoring aquifer recharge would be crucial to mitigating the impacts of drought. The researchers also recommend managing high ungulate densities or restoring predator-prey balance, while maintaining healthy populations of seed dispersers. Such measures would help to reduce herbivory pressures and restore connectivity among the species' fragmented populations.

In addition, long-term demographic and genetic monitoring would allow early detection of warning signs such as pest outbreaks, inbreeding or hybridization with domestic pear trees. These indicators could also serve as an early warning system for other tree species in Doñana, including cork oak and ash.

"The results call for a reassessment of the species' conservation status on the UICN Red List, where it is currently classified as Least Concern", says Fedriani. Findings from Doñana, together with field observations from other regions, strongly suggest that this classification may underestimate the species' vulnerability".

The researchers emphasize that Iberian pear populations are facing multiple threats and that a conservation strategy based only on legal protection is not enough to ensure their long-term viability.

Referencia

Fedriani, J.M., Garrote, P.J., Morera, B., Calvo, G., Zywiec, M., Ayllón, D., Leiva, M.J., Wiegand, T., Delibes, M. (2026). Wild pears in peril: does National Park protection ensure tree conservation? *Biological Conservation*, in press.