

Mad cow disease changed the diet of the Galician wolf

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While carrion was the primary food source for wolves in the '70s, from 2004 onwards, their diet underwent drastic changes throughout all of Galicia. Credit: Arturo de Frias Marques

The Creutzfeldt-Jakob disease crisis in Europe was a turning point for the diet of the Galician wolf, which until the year 2000, had primarily

fed on the carrion of domestic animals. A new study shows that after European health regulations made it illegal to abandon dead livestock, wolves started to consume more wild boars, roe deer and wild ponies, but also began to attack more cattle ranches when faced with food shortages in certain areas.

With the arrival of bovine spongiform encephalopathy—commonly known as mad cow disease—the European Community had to enforce a number of laws in the year 2000 in order to prevent the disease from spreading. Among other things, it became illegal to abandon the carcasses of ruminants that had died on farms; up until then, this had been an important food source for [wolves](#).

From then on, having been adopted by every European country, this measure began to affect a number of scavenger species, especially the vultures that lived on the Iberian Peninsula. But they weren't the only victims; the Iberian wolf (*Canis lupus signatus*) was also affected.

A team of researchers has analysed the dietary evolution of Galician canines by examining two time periods: before the European law was established (from the '70s up to the year 2000) and afterwards (from 2003 to 2008). Besides this legislation, a combination of other changes also affected the wolves, such as reductions in the quantity of livestock, rural depopulation and the reforestation of agricultural land, which boosted the number of wild ungulates.

The study, published in *Environmental Management*, indicates two very different dietary patterns for the two time periods. While carrion was the primary food source for wolves in the '70s, from 2004 onwards, around the time that legislation was passed to dispose of pig and bird carcasses, their diet underwent drastic changes throughout all of Galicia. The Galician wolf now largely depends on [roe deer](#) and wild pony populations.

"We've observed a decline in carrion consumption among wolves, especially in the areas studied in western Galicia, with a reduction of between 57 and 67%, dependent on the season, and a marked drop in the consumption of livestock solely in eastern Galicia (with a reduction of between 66 and 93%, dependent on the season)," Laura Lagos, researcher from the University of Santiago de Compostela (Spain) and co-author of the study, tells SINC.

Roe deer, wild boars and ponies on the menu for wolves

Between 2003 and 2008, the consumption of wild ungulates (roe deer and [wild boars](#)) and of wild ponies (Garrano horses) increased. "An increasing number of roe deer and Galicia's significant wild pony population both softened the blow when cattle carrion disappeared, allowing for a change in the wolf's diet and strengthening its predatory niche," says Felipe Bárcena, another of the authors and a scientist at the same university.

Although the roe deer seems to be the wolf's favourite prey throughout the region, different wild animals have been targeted in the different areas of the autonomous community. In western Galicia, an area previously uninhabited by these wild ungulates, roe deer and wild boars have become an important food source.

This is in addition to the consumption of wild ponies, which "has grown by 96% since the '70s, if we look at the period from April to November, and has increased five times over if we look at it from December to March," according to Lagos, who emphasises that in this western part of Galicia wild ponies now constitute the wolf's primary source of prey, just like the roe deer do in the mountains to the east.

Improving coexistence with the wolf

But although sheep and goat stock are no longer as important to the wolf's diet throughout Galicia, researchers stress that cattle consumption has increased - despite their numbers having reduced by 37%. "It has been an increase of damage in cattle farming, perhaps due to new management methods rendering cattle more vulnerable to wolf attacks," Barcena suggests.

The scientists agree that this state of affairs makes it more difficult for wolves and human beings to coexist, and has a negative impact on the conservation of this predator. For this reason, certain environmental management measures have been proposed, to ensure that the populations of roe deer and wild ponies increase.

"Habitat restoration work will also be needed in order to provide the wolves with a diverse and plentiful source of wild prey, which is essential if this canine population is to survive natural and artificial changes to its habitat, and if conflicts with livestock are to be reduced," the authors sum up.

According to Barcena and Lagos, one further measure could also be taken: animal carcasses will not need to be removed. "This should be a fairly flexible regulation, which allows farmers with large ranches in remote areas to leave ruminant carcasses out in the countryside, and it seems more logical than disposing of them in rubbish tips. But this measure must first be properly assessed," they conclude.

More information: "EU Sanitary Regulation on Livestock Disposal: Implications for the Diet of Wolves." *Environ Manage.* 2015 Oct;56(4):890-902. [DOI: 10.1007/s00267-015-0571-4](https://doi.org/10.1007/s00267-015-0571-4)

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