

## Some female bears may select dens near to people to keep the threat of males away

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Some female bears may select dens for hibernation in areas nearer to human activity to keep the threat of males from them and their vulnerable newborn cubs, researchers suggest.

A study led by conservation experts at Nottingham Trent University and European partners involved monitoring populations of brown bears in the Cantabrian mountain range in northern Spain over 20 years.

Working with researchers at the Spanish National Research Council, the Biodiversity Research Institute in Spain, the University of León, and the Czech University of Life Sciences, they looked at changes in the habitat characteristics of dens used by females to give birth to cubs.

The researchers suggest that the more dominant and experienced females may pre-emptively occupy the best locations, with good food resources and at higher altitudes and near to rugged terrain.

These higher quality areas allow them to achieve higher fitness and limit the movement of their cubs and the likelihood of encountering other bears or people.

As the number of bears increased some females began to move to sub-optimal quality areas, lower in the valleys and closer to sources of human disturbance, such as trails and roads, with shorter distances between neighboring bears' breeding areas.

Male bears are known to steer clear of areas used by people and can kill newborn cubs—known as infanticide—to make females become receptive to mating again, so getting closer to humans would help them to avoid dangerous encounters which could end badly for them or their offspring.

The effect of increasing densities on bears' spatial behavior is poorly understood and monitoring characteristics relating to females with cubs is considered to be the most important component when assessing brown bear populations.

"The Cantabrian [brown bear](#) is an example of a vulnerable large carnivore population that has recently increased in size," said researcher Dr. Antonio Uzal, an expert in [wildlife conservation](#) in Nottingham Trent University's School of Animal, Rural and Environmental Sciences.

He said: "As populations increase, the competition for space and resources does too. Restricted habitat availability may promote encounters among bears during the [mating season](#) and this in turn can lead to a higher prevalence of infanticide events.

"Our findings may suggest that some bears used areas nearer to human activity and settlements and this would enable them to segregate from adult male bears, which are known to avoid such areas.

"The research also supports a well-established theory in ecology that competition for territories results in the most dominant individuals holding the higher-quality areas earlier while the weakest are forced to find sub-optimal habitats.

"Bears nearing [human activity](#) brings obvious challenges too, however, such as potential encounters with people and a higher likelihood of animals being killed on roads. Certain areas might also need to be closed to access at particular points of the year.

"From a conservation point of view our findings are significant, as we can identify critical habitats at certain periods in the year and potentially manage activities in these areas."

The study is published in the journal *Mammal Research*.

**More information:** A. Uzal et al, Habitat characteristics around dens in female brown bears with cubs are density dependent, *Mammal Research* (2022). [DOI: 10.1007/s13364-022-00640-8](https://doi.org/10.1007/s13364-022-00640-8)

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