

Human disturbance is the most crucial factor for lynx in habitat selection

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Eurasian Lynx. Credit: Pixabay/CC0 Public Domain

Habitat selection in wildlife is a process that occurs at different scales: Balancing advantages, such as high abundance of food, with disadvantages, such as human disturbance. Large predators, with their

large spatial requirements, are particularly sensitive to these disturbances. A team led by conservation biologists Prof. Dr. Marco Heurich and Joseph Premier from the Faculty of Environment and Natural Resources at the University of Freiburg has studied this habitat selection process in Eurasian lynx. Their results, published by the researchers in *Biological Conservation*, provide important information for the conservation of this species in human-dominated landscapes. "Through this study, we can generalize the habitat selection behavior of a large carnivore species on a continental scale for the first time," explains Heurich.

Large dataset with animals in several European areas

The researchers led by Heurich and Premier used a data set consisting of tracking data on 125 lynx from nine study areas across Europe. They compared the locations available to and actually used by the predators at two scales: the landscape scale, which shows how lynx place their home range in the landscape, and the home range scale, which shows how lynx select the habitats within their home range. For this comparison, the research team used a novel machine learning approach called the random forest. This was extended to include a random effect so that variability within and between study areas could be accounted for.

What the animals avoid and how they orient themselves

On the landscape scale the analysis revealed that lynx avoid roads and human settlements. On the level of their home range, the animals were oriented towards hiding places and the availability of prey. The researchers found only minor differences between female and male lynx in their choice of [habitat](#).

Heurich and Premier found the greatest differences in lynx habitat choice at the landscape level, where there were clear differences between the various study areas, for example between the Swiss Alps and the plains of Estonia. Within the foraging areas, [lynx](#) behaved very similarly throughout Europe, preferring heterogeneous forest areas and areas that provided protection from human disturbance.

More information: Lucia Ripari et al, Human disturbance is the most limiting factor driving habitat selection of a large carnivore throughout Continental Europe, *Biological Conservation* (2022). [DOI: 10.1016/j.biocon.2021.109446](#)

Provided by University of Freiburg

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