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## Human-animal conflicts and social dimension

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### **A risk assessment framework for badger and beaver burrowing in Anthropogenic landscapes: implications for infrastructure**

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In recent decades, populations of Eurasian beaver (*Castor fiber*) and European badger (*Meles meles*) have significantly increased in the Netherlands, leading to a rise in human-wildlife conflicts. In low-lying and highly anthropogenic areas, the burrowing behaviour of these species can pose significant safety risks to dikes and the foundations of infrastructure. Burrowing is therefore a major concern for railway managers and water authorities, among others. The Dutch railway network is one of the densest and busiest in Europe, with much of it constructed on elevated track formations made of relatively soft sediment. With approximately three thousand kilometres of railway track to manage, railway authorities must identify and prioritise the most vulnerable sections to effectively mitigate risks. We developed a risk assessment tool based on habitat suitability modelling and quantification of burrowing risk, which we applied to the Dutch railway system. In this model, habitat suitability is derived from a spatial analysis of land-use data, habitat data, and remote sensing data of woody vegetation. In our approach, burrowing risk is determined by factors such as the proximity to suitable habitat and water (for beavers), the dimensions of the track formation, and the presence of burrowing-resistant fortifications, among others. A spatial analysis of the railway network prompted field surveys of identified risk areas, revealing several previously undocumented beaver and badger sites. This risk assessment method could serve as a basis for long-term monitoring and management plans to minimise human-wildlife conflicts in anthropogenic landscapes and can be applied to various types of infrastructure.