The Function of A Set-Aside Railway Bridge in Connecting Urban Habitats for Animals: A Case Study

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As elements of green infrastructure, railway embankments are important corridors in urban environments connecting otherwise isolated habitat fragments. They are interrupted when railways cross major roads. It is not known whether dispersing animals use railway bridges to cross roads. We examined the function of a set-aside iron-steel railway bridge crossing a 12 m wide road with high traffic density in Basel (Switzerland) for dispersing animals. We installed drift fences with traps on a single-track, 32 m long and 6 m wide railway bridge with a simple gravel bed, and collected animals daily for 9 months. We captured more than 1200 animals crossing the bridge: small mammals, reptiles and amphibians as well as numerous invertebrates including snails, woodlice, spiders, harvestmen, millipedes, carabids, rove beetles and ants. For some animals it is likely that the gravel bed, at least temporarily, serves as a habitat. Many animals, however, were apparently dispersing, using the bridge to cross the busy road. We found season- and daytime -dependent differences in the frequency the bridge was used. Our findings indicate an important function of a set-aside railway bridges for connecting urban habitats. As most animal dispersal was recorded during the night, railway bridges with no (or little) traffic during the night may also contribute to animal dispersal. As important elements of green infrastructure, set-aside railway bridges should be considered in future urban planning.
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