

Birds and transportation infrastructure

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Avifauna is an important component of fauna communities. The main impacts caused by transportation infrastructure on birds are: 1) Fragmentation and barrier effect - The construction of road infrastructure results in habitat loss and fragmentation, with bird populations suffering the consequences, particularly the most sensible and the forest-interior species. 2) Disturbance - Noise from traffic can be so loud that bird vocalization may be concealed. The habitats next to highways are less effective, causing decreased numbers of breeding birds. 3) Direct mortality - The data on bird mortality on European roads pass from 350,000 birds/year in Denmark to 27 million birds/year in England. Birds of prey and owls are particularly vulnerable to road mortality, because often forage near roads. Water birds are endangered if the road pass near wetlands; the installation of poles along the edge of the bridge induce birds to fly higher. It is possible to erect "bird-protection walls" or vegetation belts that encourage migrants to fly over passing traffic. In the debate about the worldwide decline of sparrows (principally House Sparrow) some role of the cars was stated -direct as road mortality, or indirect from pollution that reduces the insects used to raise the nestlings. 4) Indirect mortality - Highway medians and roadsides provide some habitat, but this kind of linear habitat close to traffic can represent an ecological trap. Some birds use bridges and viaducts as breeding site, but maintenance practices in spring can conflict with successful nesting. There are many lethal road associated structures, as powerlines that are hazardous to birds. Especially transparent/reflective noise barriers are very dangerous. Actions for mitigation were implemented, for example in Switzerland and Italy, using markers like strips and silhouettes. Following similar enterprises conducted in Canada and United States, a manual was produced for giving advice to planners and architects.