

The factors implied in bird casualty distribution on motorways

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The bird movements and the induced distribution of bird casualties on motorways, are influenced by several factors, among which landscape structures such as adjacent hedgerows or road elevation.

This study intends to determine which combinations of these factors influence the distribution of bird fatalities on motorways, especially for Passerines and Owls which are the most frequently crashed, taking account of major sources of uncertainty associated with censuses.

Study areas : 4 motorways in South-West of France, totalizing 216 km, in 2006-2009.

Method : 5 successive counts of bird carrions during 3 days censuses were made each season from a car, driven at 40-50 km.h⁻¹ on the safe lane. Road elevation and vegetation structure of verges (grass / shrubs / trees / artificial, in % surface) were recorded on 100 x 20 m verge sections, from car and from aerial photographs.

Landscape structure was evaluated with Corin Land Cover 2006 for soil occupancy, BD Topo® vegetation for hedgerows and woods, and BD Topo® hydro for hydrographic system.

Results and discussion : Passerine fatalities are mainly located on embanked, ground level, and mixed-profile motorway sections, and on verges with more than 50% of shrubs. Owls are mainly killed by traffic on sections with 50-75% of shrubs or trees.

At the landscape level, the analysis of the distribution of fatalities suggests that Passerines are more likely to be killed near wetlands areas and waterponds. Owls are more often crashed near forests. Both are killed in vineyard areas.

These results will help developing new mitigation designs in zones that concentrate the main factors responsible for bird mortality.