Roadside vegetation in Mediterranean wetlands: defragmentating or increasing mortality of birds? Management implications

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One of the challenges for the managers of protected areas is to know the effects of roads on wildlife, specially the mortality produced by circulation. This is an important issue in farmlands that suppose the feeding areas for a high percentage of species whose presence guided to the protection of the area. This has been little studied so far in areas with high density of roads. Determination of which factors influence stronger at local scale the presence of high density of roadkills, and how do interact with the fauna represent the main basis for an optimal management of the problematic.

To analyze in these roads the role of verge vegetation in bird mortality, we selected a road that crosses a wetland catalogued as Natural Park and belonging to the Natura 2000 net in the E of the Iberian Peninsula. Two sections were chosen in the road, one with reeds and associated vegetation in one verge, and another one as a control, without vegetation. Bird abundance, density, richness and diversity were studied at different distances once per week in both localities between March and November 2009. Bird mortality was monitorized along the entire road (5,5 km) twice per week during the same time period.

460 bird roadkills were detected, belonging mostly to Passeriformes (n=262) and waterfowl (n=191). Results show the great influence of the helophitic vegetation in the bird community assemblage, with differences according mainly to phenologic periods. Mortality of passerines and waterfowl were dependant on the presence of verge vegetation. It proved to be a decisive factor related to passerine's mortality, increasing the abundance of birds next to the road, and so the frequency of movements around it. Presence of vegetation with this structure affected waterfowl during the postbreeding dispersion period.

Our results suppose an interesting tool to manage the bird mortality in farmland areas surrounding protected areas through the management of verge vegetation.