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THE MAPPING OF STRUCTURAL FRAGMENTATION BY ROADS. AN APPLICATION IN NAVARRE (SPAIN)

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Abstract

The fragmenting effects of roads on the environment can be examined both locally and for targeted wildlife species but also studied from wider non-specific perspectives. Focusing on the layout of the road network, a set of methodologies to display and analyze structural fragmentation by roads have been developed, and specifically applied to the Autonomous Region of Navarre (Spain). By “structural fragmentation” we refer to those aspects of fragmentation that can be addressed and analyzed by using mainly geographic data given by the roads’ layout. Cartographic information and complementary data have been obtained that may contribute to a better understanding of road fragmentation at a regional scale. Together with other local and functional data on road structure and species distribution and dynamics the information generated by this methodology may contribute also to understand fragmentation in depth and detail beyond the reach of our structural data and analysis. The presented methodology provides useful and readily available information to the planner, in order to anticipate and prevent foreseeable impacts, mainly cumulative, due to road development.

Key words: barrier effect, cumulative impact, regional planning, road ecology, road fragmentation

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