

**Behavioural studies of the European wild rabbit  
(*Oryctolagus cuniculus*)**

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**ABSTRACT**

Changes in land use and the introduction of diseases have caused a sharp decline of wild populations of European rabbits (*Oryctolagus cuniculus*) in their native range. This decline has had serious impacts on endemic specialist predators and has caused significant economic losses due to the status of the rabbits as a game species. The success of population restocking efforts has been hindered by high mortality during the first few days after release. Stress has been identified as a key causal factor.

Through the analysis of spatial and behavioural data gathered between 1988 and 1991 from a population of wild rabbits, it was possible to obtain detailed information on long term population structure and social group dynamics. It was found that spatial distribution of the rabbits can be inferred through the analysis of a part of their home range, and this is used to provide guidelines for field studies. The mean productivity of social groups is positively related to the number of females and these groups are stable both in size and composition. Social groups are recognized as independent units and groups with less than three males have lower levels of aggression. Despite the advantages of high productivity, aggression levels between females are positively related to number of females in the groups. Aggression levels within the groups are regulated through long term stable dominance relationships.

The use of established social groups as a unit for restocking is suggested. The preservation of familiarity relationships during translocations will reduce an important source of stress for the rabbits. The release of groups of two males and four to five females of different ages is recommended as they will have a high individual fitness and productivity potential but low levels of intra-group stress. The defended area around the warrens is a barrier that reduces inter-group conflicts, and needs to be considered during management decisions.

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