

Title: Habitat requirements of Dormice, *Muscardinus avellanarius* in Relation to Woodland Management in Southwest England, *Biological Conservation*, 1990

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Background to study

Dormice have been traditionally associated with certain plant species including hazel, honeysuckle and bramble, and with coppice management; however the precise nature of this relationship is still largely unclear. Accurate descriptions of habitat requirements and management practices are essential for the conservation of dormice populations, and are of particular importance for guiding coppicing practices due to its recent revival as a method of conservation management.

Method

- 24 sites within 11 coppiced woodlands were surveyed to establish dormouse density. Sites were categorised into three classes related to age of coppice regrowth (young = <4 yrs; Mid-age = 6-10 yrs; Old = no recent or outgrown coppice) and were frequently dominated by hazel with oak and ash. Understorey and canopy species, density of understorey and fruit/seed producing trees and shrubs, woodland structure and composition were recorded within each study site.
- Dormouse nest boxes were placed in nine old coppice study sites at a density of 30/ha. Number of adult dormice encountered in October was used to estimate population density.
- 20 live cage traps were placed along two transect lines within 17 study sites (including two sites with nest boxes to calibrate density estimates). Traps set for 8-10 nights in autumn 1987 and 1988. Traps were checked daily and individuals were uniquely marked and catch rate per 100 trap-night effort was used to estimate density at 12 sites where dormice were encountered.

Key results

- Only one dormouse was captured within one of three young coppice sites which had a continuous cover (95%) of fruiting bramble due to the absence of arboreal routeways.
- Abandoned and mid-age coppice sites with a sprawling understorey and high number of berry producing shrubs were significantly related to higher dormouse densities. The number of honeysuckle plants, mid-summer food source and overlapping understorey was further related to density in abandoned coppice and the diversity of shrubs and trees in mid-aged coppice.
- For all coppiced woodland types, the occurrence of a sprawling un-shaded understorey with high species diversity and number of food producing trees significantly increased dormouse density.
- Species diversity and the amount of canopy overlap were consistently found to be indicators of habitat quality associated with dormouse density across all sites.

Key messages to landowners and managers derived from these results

- Coppice management will help maintain suitable dormouse habitat and should be pure coppice or coppice with low density standards that are thinned in response to increased shading.
- Coppice should be cut in on a long rotation to ensure productivity of fruits and seeds and to promote a sprawling understorey. Blocks should be small to reduce the loss of suitable habitat available to dormice at any one time. Coppiced areas are likely to be uninhabitable for at least four years after cutting and connectivity between suitable habitat blocks must be maintained.
- Coppicing to benefit dormice may not be necessary if a vigorous, productive, un-shaded understorey is present. The loss of suitable habitat should be a consideration if reinstating coppicing, especially on small reserves where alternative habitat may not be available.

Key words/phrases

Dormice; *Muscardinus avellanarius*; England; habitat requirements; coppice woodland; nest boxes; live trapping; understorey