

Title: Hedgerow Management, Dormice and Biodiversity, *English Nature Report 424, 2002*

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Background to study

Dormice utilise hedgerows as dispersal corridors and for permanent residence and as such are useful biodiversity indicators. The management of hedgerows however has undergone vast changes in the past century and the impact of these changes on dormice prevalence is relatively unknown. This information will be useful for informing the conservation management of hedgerows for dormice and for biodiversity.

Methods

- 15 dormouse nest tubes were placed within 300 m sections of 59 hedgerows previously occupied by dormice between 1975 and 1979.
- 100 dormouse nest tubes were placed within 2 km sections of 50 randomly selected hedgerows across 5 regions (10 sites per region). Hedgerows were either cut on both sides and the top during the previous winter (3 per region) or uncut on both sides and/or top for >1 year.
- Tubes were set up in March-April and checked the following June and September-October
- Hedgerow characteristics, estimated age, management and fruit production were recorded.
- Dormice were captured within several hedgerows and radio collared for 3-8 nights mid-summer. Tracking information was obtained hourly per night and dominant shrub species/suite recorded.
- Questionnaire information on hedgerow management in 1920-30 was obtained to assess management changes.

Key Results

- Dormice were absent in 64% of hedgerows where they had been present in the late 1970's and hedgerow width and year since cutting was positively related to the survival of populations.
- The density of dormice was higher in uncut than cut hedgerows and was primarily related to hedgerow height and then shrub diversity which are indicative of ancient hedgerows. Dormice were commonly absent from intensively managed and species poor hedgerows.
- Hedgerows that were occupied by dormice in autumn remained occupied in spring, indicating permanent residency and juvenile density in hedgerows increased with closer proximity to ancient woodlands suggesting hedgerows were important dispersal corridors.
- Hedgerow cutting other than on one side negatively influenced the dormouse presence hedgerows should be cut at most once every three years to maintain optimum height.
- Radio collared dormice (20) fed on bramble, dog-rose and hazel and avoided hawthorn. The mean range length was 185 ± 47 m which was smaller overall than that of dormice in woodland.
- Hedgerows on arable farmland with high hawthorn cover were cut most frequently and the abundance of soft berries increased from 1-2 years after cutting but decreased after. Flailing had a negative impact on berry production. Hard seed production was strongly related to cutting interval with more seeds being produced when cutting intervals are increased.
- Historical accounts suggest that the frequency of hedgerow cutting has increased and where the majority of hedgerows were cut by hand, layed or coppiced in the 1920's and 30's, the majority of surveyed hedgerows (68%) were currently cut by mechanical flailing.

Key messages to landowners and managers derived from these results

- Mechanical flailing and intensive cutting of hedgerows reduces their suitability for dormice and should be discouraged especially where dormice are known to occupy neighbouring woodlands.

- Hedgerows are clearly used as dispersal corridors and appropriate management of hedgerows connected to woodlands occupied by dormice should be a priority.
- Hedgerows should be trimmed at three year intervals at most and maintained at a height of at least three - four metres. This should be done on rotation, cutting between 10-30% of hedgerows each year and leaving some uncut for up to 10 years to encourage hard seed production. This will ensure food production of both soft fruits and hard seeds in any one year for dormice and other species.
- Coppice or lay hedgerows to remove gaps and increase base density. When laying new hedgerows use at least 7 species. Dormice have restricted resources within hedgerows and the provision of diverse food resources will promote residency and improve successful dispersal.
- If possible do not use flails to manage hedgerows as they reduce soft fruit production and reduce the suitability of hedgerows for dormice.
- Where the size of hedgerows needs to be managed, avoid cutting the top and cut only one side.

Key words/phrases

Dormice; *Muscardinus avellanarius*; UK; hedgerows; dispersal corridors; biodiversity; hedgerow management; radio tracking; fruit production; flailing