

Title: Ranging and nesting behaviour of the dormouse, *Muscardinus avellanarius*, in diverse low-growing woodland, *Journal of Zoology* 1991

Author: PW Bright and PA Morris

Country: UK

Background to study

Despite their scarce distribution, little is known on the movements and range use of dormice across their European range. The development of nest boxes which are readily used by dormice provides opportunities for more comprehensive studies on their ecological requirements and preliminary radio tracking studies suggest dormice may exhibit 3-dimensional range with a substantial vertical component. Use of these methods could provide much needed information on the movements, range and nest use of dormice and help inform appropriate conservation management.

Method

- 34 dormice (17 male, 17 female) were radio collared within a 2.5 ha low growing deciduous woodland dominated by 50 year old hazel coppice.
- 5 tracking sessions lasting 6-8 nights were conducted between May and September, including one from previous year used as supplement data. Collars were removed after each session and 5 marked individuals were re-collared for 2-3 tracking sessions.
- Fixes were obtained hourly and tree species, height above ground and motion was recorded.

Key results

- Dormice were completely arboreal and open ground was circumnavigated to obtain food sources from fruiting/flowering trees. Detours, although low in frequency commonly comprised of <30% (range 8-77%) of total distance travelled during one night.
- Home range size and mean distance travelled per night and from nest sites was greater for males than for females but ranges were relatively small (0.45 and 0.19 ha for males and females) and individuals rarely moved further than 100 m from their nest
- The majority of activity centred on small areas (3-5 trees) within individual ranges and this varied slightly between seasons (<150 m) to encompass seasonal resources as they became available.
- Nests were located on the periphery of ranges and were commonly in artificial nest boxes.
- Male home ranges rarely overlapped but commonly incorporated 2 female ranges. Female to female overlapping ranges were frequently observed.

Key messages to landowners and managers derived from these results

- Discontinuities within woodlands such as clear cuts and wide rides are circumnavigated by dormice and potential barriers to movement, potentially isolating low density populations. Where possible rides should remain bridged by canopy branches and large areas of open ground avoided. Small isolated trees within clear fells are unlikely to benefit dormice due to their resistance to cross open ground.
- Hedgerows may be important dispersal corridors due to the observed resistance of dormice to cross open ground. Maintaining connectivity between woodlands and continuous hedgerows may be an important consideration in landscape design.
- Ranges of dormice are relatively small indicating that food and nesting resources need to be readily available within small areas. High species diversity of shrubs and trees will help provide a seasonal succession of food sources accessible within dormice ranges (<0.45 ha).
- Nest boxes are frequently utilised by dormice and therefore a useful monitoring tool. Natural nests can be <7 m above ground and unlikely to provide reliable method for monitoring densities due to limitations on detection.

Key words/phrases

Dormice; *Muscardinus avellanarius*; radio tracking; nest boxes; movement barriers; movement patterns; arboreal; seasonal activity; home range