Title: The Population Ecology and Monitoring of the Dormouse *Muscardinus avellanarius*: The response of dormouse populations to coppicing depends on woodland type: habitat management to improve the dormouse's conservation status, *PhD Thesis, Royal Holloway, University of London, 2004*

Author: FJ Sanderson

Country: UK

Background to study

The cessation of coppice woodland management is thought to be partly responsible for the decline of the hazel dormouse and research into the effect of appropriate coppicing regimes on dormouse populations has produced conflicting results. The food productivity of coppiced woodlands is likely to be dependent on factors such as rotational length, woodland type, and compartment size and as such this information will be valuable for guiding coppice management for dormouse conservation.

Method

- Data on dormice (pre-breeding density in June, post-breeding density in October and number of juveniles ≥6 g in October)) were obtained for years 1996-2000 from 29 broadleaved National Dormouse Monitoring Programme (NDMP) sites across the UK.
- Sites were separated into hazel and oak NVC woodland types and habitat surveys using 20 random 10 m quadrats were undertaken in 2000. Variables recorded Inc: % cover edible shrub spp and all tree spp, field layer height and max height and width of understorey shrubs.
- Coppice management including size of compartment, time since coppice, coppice age variation and % of area with 0-5 and 6-25 yr coppice regrowth was obtained for each site.

Key results

- Sites with increasing coverage of coppice aged 0-5 yrs had a lower pre-breeding abundance of dormice. Coverage of 5-20% was predicted to decrease dormouse abundance in June by 44%.
- Increasing cover of 6-25 yr old coppice in hazel sites had a negative effect on dormouse abundance and increases from 10-50% resulted in a <48% predicted declines in abundance. Conversely, increasing cover of 6-25 yr old coppice in oak sites resulted in a predicted 54% and 61% increase in dormouse abundance in June and October.
- Field layer extent was positively correlated with abundance in all seasons whereas autumn food availability was negatively related to pre and post breeding adult abundance.
- Increasing cover of spring food bearing trees/shrubs increased juvenile abundance which was higher overall in eastern sites. Northern sites had a lower adult abundance in October.
- Hazel productivity in derelict coppice oak sites was less than in derelict coppice hazel sites and overall only coppice aged 13-25 yrs supported more dormice in October than derelict coppice.
- Pre and post-breeding abundance were lower in all compartment ages at oak than at hazel sites, however when compared with derelict coppice compartments, dormouse abundance increased to a greater extent in oak sites when compared to hazel.
- Newly cut coppice (0-2 yrs) supported the least number of juveniles overall and in oak sites, juveniles and June abundance was higher in coppice aged 13-19 yrs than 9-12 yrs.
- Mosaics of coppice ages within woodlands positively influenced juvenile abundance and larger compartments support a larger number of dormice both pre and post-breeding.

Key messages to landowners and managers derived from these results

- Newly coppiced compartments (0-5 yrs) should cover no more than 10% of woodland sites.
- Reinstating coppicing should be done over a number of years and may benefit oak woodland types more so than hazel woodland types.
- At hazel sites, 6-25 year old coppice should cover no more than 20% of a site.

- At oak sites, 6-25 year old coppice should predominate and rotational lengths should be a minimum of 15 years.
- Aim to provide a mosaic of coppiced compartments of different ages with compartment sizes ranging from 0.5 - 2 ha. Too smaller compartments are likely to be overshadowed by adjacent canopy trees and larger compartments may reduce food availability when their age is unfavourable to dormice.

Key words/phrases
Dormice; *Muscardinus avellanarius;* National Dormouse Monitoring Programme; dormouse abundance; coppicing; management; oak; hazel