Title: Common dormouse (Muscardinus avellanarius) movements in a landscape fragmented by roads, *Lutra, 2012*

Author: P Chanin & L Gubert

Country: UK

Background to study

The presence of dormice in small woodland patches (<100 m^2) isolated by roads and open ground in the UK and Europe infers that dormice may be able to exploit more isolated and smaller habitat fragments than previously thought. This has important implications when surveying and mitigating the impacts of development on dormice. As such there is a need to gain a better understanding of how populations use small habitat patches fragmented by roads.

Method

- 100 nest boxes and 200 nest tubes were placed at 30 and 10 m intervals respectively, within 9 0.2 ha - 10 ha habitat patches along a 2 km stretch of highway with high traffic flow.
- Habitat patches within the central reservation had been isolated for <25 years.
- All isolated patches (n=6) were <1 ha and were isolated from another patch by <12 m across the highway or <500 m along the length of the road. 3 patches were connected to suitable habitat.
- Monitoring was conducted monthly between April and September/October from 2007 to 2010 and encountered individuals >12 g were permanently marked using Trovan 8 mm PIT tags and their sex, breeding condition, weight and was determined.

Key results

- 62 marked dormice were found in 7 of the 9 habitat patches, including all patches located on the central reservation. 88% of dormice encounters were in nest boxes.
- Dormouse presence was recorded every year in patches on the central reservation but varied annually in patches on the north and south side of the highway.
- Breeding was observed in 5 of the 7 patches and was most frequent within a central reservation and north side patch where the encounter of marked individuals was highest.
- There were significantly more records of breeding in patches >0.5 ha than those smaller; however a single female produced a litter in a 0.2 ha patch.
- There was strong evidence of 8 road crossings involving 4 females and 2 males over the 4 years.
- Weak evidence suggests road crossings were related to dispersal rather than a) foraging; as movement occurred outside of the fruiting season, and b) breeding; as a higher proportion of females moved during breeding season rather than males.

Key messages to landowners and managers derived from these results

- Nest boxes are an effective tool for monitoring the presence of dormice.
- Small, partially isolated fragments of habitat (<0.2 ha) that are not remote from other habitat patches are potential dormouse sites and should be surveyed to establish presence over more than one season to account for seasonal use.
- Increase small habitat fragments (<0.5 ha) to increase breeding and population viability.
- Medium sized roads <12 m should not be seen as barriers to dormouse movement and considered as suitable and potential habitat.
- Planting roadside trees may promote dispersal between fragmented habitats isolated by roads.

Key words/phrases

Common dormouse; *Muscardinus avellanarius;* PIT tag; highway; habitat fragmentation; dispersal; habitat patch size; nest boxes; nest tubes