Title: The importance of hedgerows for hazel dormice *(Muscardinus avellanarius)* in Northern Germany, *Peckiana, 2012*

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Background to study

The distribution and status of dormice in Holstein, is currently undetermined. Only 10% of this region is forested, however over 45,000 km of hedgerow networks exist and its utilisation by dormice has until now been overlooked due to the focus on woodland for dormouse monitoring. Information on dormouse distribution, their utilisation of hedgerows and the factors that influence presence will be fruitful for the dormouse conservation within the region.

Method

- Dormouse presence was investigated within 5 study sites varying from low to high woodland and hedgerow density representing low to high suitability for dormice respectively. Soil type, road density, railway networks, surface water and rivers were considered as potential factors.
- A total of 503 nest tubes were erected at 15 m intervals within hedgerows across the study area from June till November 2008. Nest tubes were checked monthly. A further 196 nest tubes were erected from September 2008 in one of the high suitability study sites.
- All hedgerows and wood edges were mapped up to a length of 500 m and the height, width, no. gaps; tree density, shrub and herb layer (%), isolation and no. of woody species were recorded. Hedgerows were assigned quality scores ranging from 1 (very good) to 5 (poor).
- Landscape structure (hedgerow density, quality and woodland cover) was assessed for a 3 km and 500 m radius per area. Landscapes were scored from very low (isolated hedgerows, small isolated woodlands) to very high (very high hedgerows density, nearby woods) connectivity.

Key results

- Hedgerow occupancy by dormice ranged from 25% to 64% and correlated with landscape suitability, where denser hedgerows and wooded landscapes had higher occupation rates.
- Free hanging dormouse nest density ranged from 0.1 - 2 nests per 100 m and nest tube nest density ranged from 1.2 - 5.5 nests per 100 m. Breeding nests were observed.
- >50% of nests were in blackthorn. Bramble, hawthorn, reed were used but to a lesser extent.
- Nest tube occupation by hazel dormice was highest in October/November.
- Hedgerows were characterised by blackthorn-hazel and as such species composition did not have a significant effect on the utilisation of hedgerows by dormice.
- $\geq$ 12 woody species significantly increased the presence of dormice in hedgerows.
- Large woodland presence and density of hedgerows did not influence dormouse abundance within a 3 km of sites. Higher quality hedgerows increased dormouse occupancy <500 m.

Key messages to landowners and managers derived from these results

- Hedgerow planting or improvement works should aim to have $\geq$12 woody species to improve suitability for resident and/or dispersing dormice. Include hazel and blackthorn.
- Where dormice populations are isolated, hedgerow planting and improvements to existing networks (reducing gaps, increasing species richness) will help the viability of populations.
- Hedgerows should be surveyed for the presence of dormice, prior to management works.
- Nest tubes should be checked October/November to improve detectability.

Key words/phrases

Dormice; *Muscardinus avellanarius;* hedgerows; landscape connectivity; nest tubes