

**Title:** Use of nest boxes by the common dormouse (*Muscardinus avellanarius* L.) in Lithuania. *Nat. Croat., 1997*

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### **Background to study**

Nest boxes have facilitated investigations into the distribution and population dynamics of the common dormouse across its distributional range. In Lithuania which is in the north-west part of the species distributional range, research on dormice using nest boxes has to date, not been performed. Here detailed data on nest box use by dormice is presented.

### **Method**

- Nest box data was obtained from 3 Lithuanian districts; Šakiai (1971-1990), Moletai (1984-1993) and Kasiadorys (1990-1996). Standard wooden nest boxes intended for small hole-nesting birds (35 mm holes) were used and sited 1.5-2 m above ground at 50 m intervals, in a grid. Additional boxes were erected at 1, 2 and 3 m above ground on the same tree at one site (1985 - 1987) and additional ceramic boxes were placed on 20 trees hosting wooden nest boxes (1985-1990).
- Nest boxes were checked once monthly (April-October) and twice during May and September. Encountered individuals were marked and weighed and their sex and age determined. Nest material and other species occupying boxes were also recorded.
- Correlations between habitat parameters obtained from a 20 m radius of each nest box and the rate of nest box occupation by dormice were undertaken.

### **Key results**

- Common dormice utilise nest boxes throughout their active season. The highest spring occupation is May when 10-20% of nest boxes were occupied by a similar number of males and females. In autumn highest occupation rates occurred in September (30-40% of nest boxes).
- Nest box occupation decreases during June and July when females with litters are most frequently encountered and again in October when young of late litters are most frequently encountered. During November only solitary juveniles are found.
- 88% of all dormice found in nest boxes during April were male, suggesting they arise from hibernation earlier than females and independent juveniles are first encountered in July and make <70% of the dormice encountered during September.
- Nest boxes were most commonly occupied by single individuals particularly in spring, however group encounters were observed, most frequently from July and October when independent juveniles share home ranges and nest boxes with adults. In autumn, different sex pairs of dormice were most frequently encountered (68%) including sharing adults, juveniles and both. Adult males or 1 or 2 independent juveniles were found infrequently with females with litters.
- 45% of dormouse nests were constructed with leaves from hazel, aspen, oak, birch, lime, raspberry and other species and were commonly constructed by males and independent juveniles. Two layered nests were also frequently encountered (40%) where grass and stripped hazel linings were recorded. These were commonly built by adult females.
- Dormice frequently occupy bird's nests constructed in nest boxes, notably the pied flycatcher.
- Highest nest box occupation by common dormice was in mixed spruce and deciduous woodland with dense hazel undergrowth which had a significant positive relationship with nest box occupation. Higher tree crown density decreased nest box occupation.
- Common dormice showed a preference for nesting in boxes located 4 m above ground opposed to 1 and 2 m. Yellow necked mice showed no preference to nest box height.

**Key messages to landowners and managers derived from these results**

- Conserving hazel woodlands and encouraging a dense hazel understorey is recommended in Lithuania and Great Britain where dormice exploit hazel for nesting and food.
- Nest boxes located in areas of denser understorey and reduced canopy cover are likely to have increased activity by common dormice.
- The detection of dormice in nest boxes may decrease in areas where tree holes >4 m above ground are common.
- Deciduous components to forests are recommended to provide diversity of food resources and nesting material (fallen leaves), notably in spring.

**Key words/phrases**

*Muscardinus avellanarius*; Lithuania; nest box occupancy; habitat preferences; nesting material