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note/priopćenje

COMMON DORMICE IN SMALL ISOLATED WOODS

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Common dormice in small isolated woods were studied in 1996 in Saxony (Germany). These woodlands were isolated for 150 years and there were no connecting structures between them. 215 nestboxes were put up and 75 live traps were used for capturing dormice. Animals were marked by ear-tattooing. There were 141 captures of common dormice, and 41 adults and 30 juveniles were marked. It seems that dormice do live isolated, but without genetic exchange they would not be able to survive. Hedgerows can be helpful as connecting structures during the possible migration.

Key words: common dormouse, Muscardinus avellanarius, isolated woods, Germany

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Proučavani su puhovi orašari u malim izoliranim šumama u Saskoj (Njemačka) 1996. godine. Te šumske površine bile su izolirane 150 godina i ni na koji način međusobno povezane. Postavljeno je 215 kućica, a za lov životinja korišteno je 75 živolovki. Životinje su markirane tetoviranjem uha. Ulovljena je 141 životinja, a markirana je 41 odrasla i 30 mladih životinja. Čini se da puhovi ipak žive izolirano, ali bez izmjene genetičkog materijala ne bi mogli opstati. Tijekom moguće migracije puhovima vrlo dobro može poslužiti živica.

Ključne riječi: puh orašar, Muscardinus avellanarius, izolirane šume, Njemačka

INTRODUCTION

In Upper Lusatia (Eastern Saxony, Germany) we know that *Muscardinus avellanarius* occupy small isolated woods. These woodlands are the residue from forests of clear-felled trees, growing on wet or stony places not suited to agricultural use. These patches have been isolated for 150 years and no connecting structures like hedgerows are left. Since common dormice are vulnerable to habitat fragmentation and in need of arboreal path ways (BRIGHT, MITCHELL, MORRIS 1994) this fact raises

questions about insular ecology in *Muscardinus avellanarius*. How do common dormice survive in small woods of about one hectare? Is there an exchange between the patches and the larger woodlands? The present study will provide some first ideas resulting from half a year of field work.

METHODS

Study area: We chose a study area of 4 square kilometres near Görlitz with hilly landscape on granite subsoil. Large woodlands enclose agricultural fields and two small woods in between called study site A and B. Site A is of about 0.85 ha in extent with a distance of 250 m to the nearest edge of larger woodland. Site B is of 1.5 ha and 350 m away from the next wood. The vegetation type of site A is natural birch-oak wood with well developed understorey of *Rubus fruticosus* and *Rubus idaeus*. Site B is a black alder-ash forest. The deciduous forests of the larger woodlands are replaced in several parts by Norway spruce and pine plantations.

Capture methods: 215 nestboxes with a tree-facing entrance hole were put up in rows at approximately 30 m intervals. All boxes have been regularly inspected since April 1996 at two-weekly intervals. Seventy five live traps (described by MÜLLER-STIESS, 1989) were set up in May 1996. Trap distribution was irregular and not ordered to a grid pattern. There were at least 20 traps/ ha at sites A and B. Trapping was conducted every two weeks for three nights. Upon capture, animals were marked by ear tattoos and identified if recaptured, sexed, weighed, checked for reproduction signs, and their location was noted.

RESULTS

There were 141 captures of common dormice by the end of September. Forty one adults and 30 juveniles were marked individually. Oak woods with well developed understorey and wood edges where ash, hazel and wild cherry grow turned out to be preferred by *Muscardinus avellanarius*. Dormice reproduced at site A and site B in 1996. One male and one female were regularly captured at site A from May to July. Two juveniles (males) were born there between June 1st and 5th. They were marked when they weighed 7g and 8g. No dormice were captured at site A in August and September (probably because a local farmer was cutting down dead trees at the same time). One of the two juveniles born at site A was recaptured at the nearest large woodland on September 19th. The total distance crossed was 450m, including at least 250m of open ground (120m wheat field, 100m clover field, 30m grassland).

DISCUSSION

This study relied on captures in traps and nestboxes to construct individual histories for the animals. Since dormice are difficult to trap (MORRIS & WHITBREAD 1986) not all animals were known. Recaptures of dormice which did not occupy

nestboxes were rare events. We only found that single case of crossing open ground for dispersal. However, it seems to be an infrequent but normal behaviour in the common dormouse, as BIEBER (1995) suggested for the edible dormouse. BRIGHT, MITCHELL and MORRIS (1994) suggested that fragmentation of woodlands has been a major factor leading to the extinction of common dormice and that isolated woods less than 20 ha in extent are unlikely to support viable populations. Survival of dormice in small woods may depend on dispersal. Their data imply that dormice might use hedgerows to colonise a new woodland, even isolated by as much as 1.5 km (BRIGHT, MITCHELL, MORRIS 1994). We also think that dispersal into high-quality habitats helps to support the occurrence of *Muscardinus avellanarius* in small isolated woods. It is unlikely that without genetic exchange dormouse populations would survive in our study sites, since these woods are very small and have been isolated for more than 100 years. It seems that hedgerows are helpful as connecting structures to the migrating dormice but not absolutely necessary when crossing short distances. Further investigations are needed to answer questions on frequency and distances of dispersal.

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SAŽETAK

Common dormice in small isolated woods

S. Büchner

Proučavani su puhovi orašari u malim izoliranim šumama u Saskoj (Njemačka) 1996. godine. Te šumske površine bile su izolirane 150 godina i ni na koji način međusobno povezane. U travnju 1996. godine postavljeno je 215 kućica, koje su provjeravane svaka dva tjedna, a za lov životinja u svibnju 1996. korišteno je 75 živolovki. Životinje su markirane tetoviranjem uha. Ulovljena je 141 životinja, a markirana je 41 odrasla i 30 mladih životinja. Zabilježen je samo jedan slučaj prelaska preko područja između šuma. Čini se da puhovi ipak žive izolirano, ali bez izmjene genetičkog materijala ne bi mogli opstati. Fragmentacija šumskih površina je glavni faktor u izumiranju puhova. Živica može vrlo dobro poslužiti puhovima tijekom moguće migracije.