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Työn nimi — Arbetets titel

Home range, Habitat Preference and Natal dispersal of the Siberian Flying Squirrel (*Pteromys volans*)

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Tiivistelmä — Referat

The Siberian flying squirrel is a nocturnal, arboreal rodent that is declining due to modern forestry. It inhabits mature mixed forest. I studied demography, home-range size, nocturnal activity, nest usage, habitat preference, and juvenile dispersal of six adult flying squirrels and six juvenile flying squirrels. This data was collected by following the animals with radiotelemetry. I followed adults from April to October 1997 and juveniles from July 1997 to January 1998. The study took place in two areas; one that consisted of fairly contiguous forest and another that was more fragmented. Four adults and three juveniles were tagged in the contiguous forest, and one female and three juveniles were tagged in the fragmented forest. Adult females were bigger than males during the breeding season and in the autumn. Juvenile weights were similar. Home range size, movements, and habitat preference were analysed using Geographical Information Systems. The average 100% MCP for males was 88.4 ha, the average 95% MCP was 64.1 ha, and the 80% cluster was 1.6 ha. The average female 100% MCP was 4.6 ha, the 95% MCP was 2.6 ha, and the 80% cluster was 0.5 ha. The home ranges of males and females overlapped. Juveniles had on average a 100% MCP of 10.6 ha and a 95% MCP of 6.6 ha. Males were on average 239 m away from the nest when located, whereas females were 84 m away from the current nest. When followed continuously males moved further than females. Both males made journeys of over one kilometre. Males crossed open areas with scattered trees. Females remained within forest. Adults had on average 5 cavities and 1 drey and changed nest site 6 times throughout the study. Juveniles used 2 cavities and 1 drey and changed nest 4 times on average. Female juveniles dispersed at the age of 2 months and moved further than the males. The adult 80% cluster had a higher basal area of aspen (*Populus tremula*) than the 100% MCP according to a polychotomous logistic regression model. In the univariate analysis summer canopy cover and aspen basal area were greater in the adult 80% cluster than the 100% MCP. The most preferred habitat within the 100% MCP was spruce forest, whereas in the 80% cluster and radio-tracking locations it was deciduous forest. Adults preferred to have their nests in deciduous forest. The pattern was similar for juveniles except that their 100% MCP and radio-tracking locations contained younger forest and sapling stands. Home range layout suggests that females may be territorial. Adult survival was 0.8 and juvenile survival ranged from 0.25 to 0.75. Male home ranges are large enough to include several female home ranges. Both males and female were found most of the time in small proportion of their home ranges. Reasons for changing nest site are 1) soiled nest material, 2) ectoparasite infestation, and 3) predation. Males may move long distances to search for potential mates. Aspen was an important factor because it provides nest sites, shelter and food. Females may compete for resources and dispersal may be female biased as a home range only has enough resources for one female. Males can move long distances and have large home ranges and do not need to disperse so far. Modern forestry has affected the flying squirrel by reducing the amount of preferred habitat, reducing food and nest trees, and creating isolation. Nest cavities may be a restricted resource. Flying squirrels can cross open spaces if some trees are left standing, or the gap between forest patches is less than the maximum glide distance. The hypotheses presented in this thesis are tentative, because sample size was small and some aspects have not been studied before.

Avainsanat — Nyckelord

activity, conservation, Geographical Information Systems, habitat preference, home range, natal dispersal, microhabitat, macrohabitat, nest site, *Pteromys volans*, radiotelemetry, Siberian flying squirrel, territoriality

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