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Conflict between forest management and the conservation of Siberian flying squirrels

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During the last two decades the Siberian flying squirrel, *Pteromys volans*, has received wide research and conservation interest in its western edge of distribution range. In this talk, I briefly review achieved knowledge on ecology of the species and talk about the conflict between forest management and conservation of the species in Finland. The Siberian flying squirrel is more restricted in its habitat selection than many tree squirrels in temperate and boreal forests, preferring only certain sites within the forest. However, the species ability to survive in fragmented forest landscapes seem to be quite good based on studies of movement capacity and occupancy patterns. These topics are well studied for flying squirrels.

Consequently, population ecology of Siberian flying squirrel is relatively well known, although we still lack, for example, modeling work predicting population responses to changes in the environment. The species role in forest communities is a poorly known topic, but it does not seem to have a central role in boreal forest food web. The effect of predators on flying squirrel numbers is unclear, but recent analysis indicates that predators may affect occurrence of flying squirrels in the landscape. The amount of nesting cavities may limit more flying squirrel

numbers than food resources although role of the latter is unclear. The data behind population decline is spotty, but all available data indicates steady decline in flying squirrel numbers. The reason for decline is likely related to forest management. Extensive field work has been done to estimate the population size of the flying squirrel in Finland, and these data have potential to serve as a tool to study factors behind distribution of the species. The ecological knowledge produced can be used to advise forest management, and predictive occupancy models have, for example, been built to inform management. However, in practice, ecological information has been poorly utilized in management planning in Finland, perhaps due to fear of extra costs by managers. Modeling that compares alternative management methods though suggests that forest management could be planned without extra costs to protect occurrence of the Siberian flying squirrel at the landscape scale.