

# Monitoring of flying squirrels on urban areas

## Results and conclusions on flying squirrel monitoring in city plan areas in Espoo, Kuopio and Jyväskylä



Summary of the document:

Hakala, A., Laita, A., Le Tortorec, A., Lundgren, L. & Ruokolainen, K. (2022). Liito-oravakartoitukset toteutuneilla asemakaava-alueilla. Tuloksia ja johtopäätöksiä Espoon, Kuopion ja Jyväskylän asemakaavakohteilla tehdyistä monivuotisista liito-oravakartoituksista. Liito-orava-LIFE 2022.

During the Flying Squirrel LIFE project, the cities of Espoo, Kuopio and Jyväskylä conducted monitoring of flying squirrel habitats on selected city plan areas (Action A4). The areas were in different stages of construction, and all of them had flying squirrel habitats that have been protected by city plan symbols and regulations. The goal of the survey was to find out, how the flying squirrel survives in areas under construction and how well different kinds of planning regulations had succeeded to protect flying squirrel habitats in the built environment.

Monitoring of the city plan areas aimed to find out,

- if flying squirrels still inhabit the selected areas, and which core areas and routes it uses,
- if planning regulations have succeeded to protect the habitats and connections of good quality,
- how the habitats have changed due to construction that the city plans allow.

Similar monitoring was made in all three cities. In Espoo, the survey was made in 2019-2021 for five different areas. Kuopio surveyed eight areas in 2019-2020 and Jyväskylä ten areas, also in 2019-2020.

Monitoring surveys indicated that regulations and symbols in city plans may support the protection of flying squirrels in built areas. In the plans, flying squirrel habitats and connections were marked with different kinds of symbols and regulations: habitats can either be outlined in the plan as a protected area with its own planning regulations and restrictions. Another option is to include notification of the flying squirrel habitat to the general regulations for the territorial plan symbol.

Results of the surveys showed that any specific symbol was no better than others, but the suitability of the symbols needed to be decided to suit each context and situation separately. The importance of marking ecological connections to the city plan was highlighted in the results. Connectivity of the flying squirrel core habitats is crucial for the survival of the species and these connections are easily too narrow and exposed in the urban environment. In most cases, flying squirrels inhabited the same areas before and after construction, even if the quality of the habitat and/or its connectivity had weakened.

### Key learnings for protecting flying squirrel habitats and connections by city planning:

- The most useful symbols and regulations depend on the context and need to be considered in each city plan separately.
- Determination of flying squirrel habitats need to be large enough and they need to include a protective belt around the most significant trees.
- Whenever possible, flying squirrel habitats and connections should be determined as recreational or as boundary greenspaces. Regulations for protecting the species are not recommended to be set on private land.
- Ecological connections should be wide enough. Too narrow connections with too few trees are vulnerable to storms, for example.
- Each core area should have at least two secure connections to other core areas. These connections should be secured in the city plan.

