

## Flying squirrel situation, conservation challenges & Flying Squirrel LIFE project activities in Finland

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Flying Squirrel LIFE (LIFE17 LIFE/NAT/FI/000469)

Metsähallitus, Parks & Wildlife Finland

Final Seminar Estonia 16.10.2014



Flying squirrel feeding on alder's buds and catkins.

Photo: Arto Griinari, Vastavalo.fi



## Main points today

- ❖ Flying squirrel needs special attention: an umbrella species for forest biodiversity
- ❖ Flying Squirrel LIFE brought stakeholders together and increased understanding
- ❖ Future is also in our hands

Photo: Benjam Pöntinen





## Siberian flying squirrel (*Pteromys volans*)

**Finland: VU**  
**Estonia: CR**



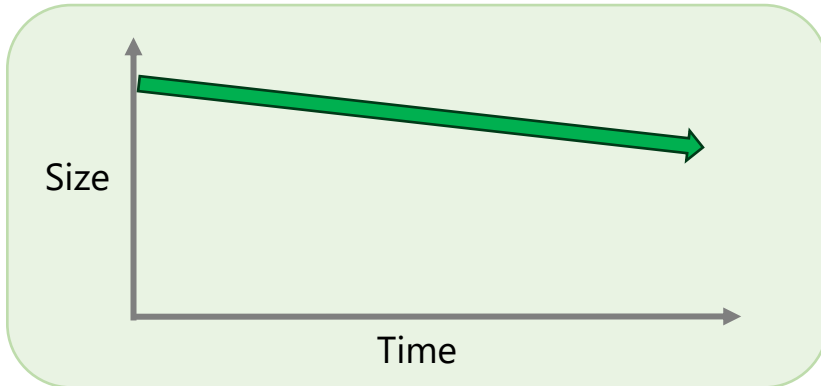
Photos Eija Hurme (forest) and Benjam Pöntinen (flying squirrel)  
Global range map: IUCN

Scale differences between Finland & Estonia exist, but the main threat for flying squirrel is the same:

## Habitat loss and fragmentation

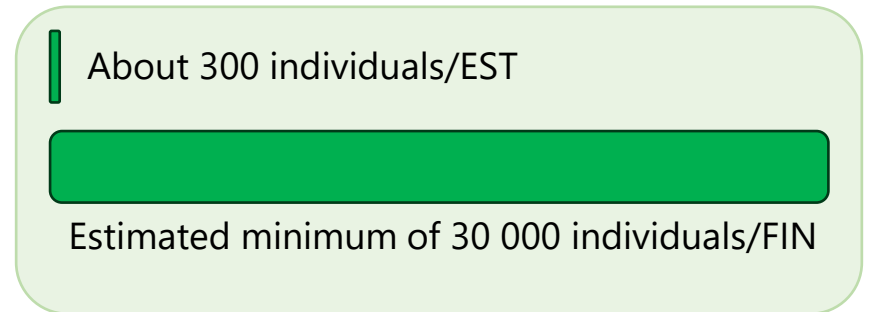
### Finland **VULNERABLE**

Population decrease >30% in 10 years



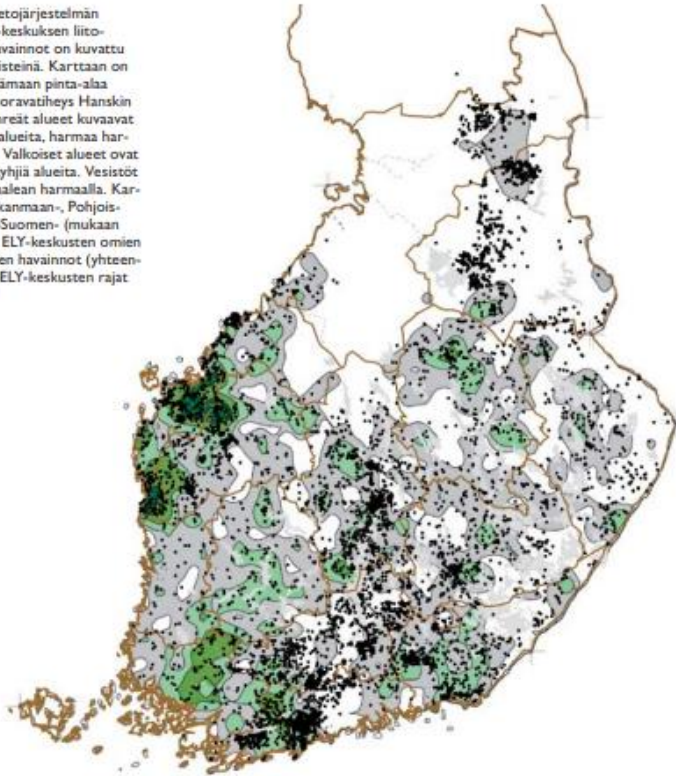
### Estonia **CRITICALLY ENDANGERED**

Rapid shrinking of the range and a tiny population





Kuva 15. Eliolajitietojärjestelmän ja Uudenmaan ELY-keskuksen liito-oravahavainnot. Havainnot on kuvattu karttaan mustina pisteinä. Karttaan on kuvattu myös metsämaan pinta-alaa kohti laskettu liito-oravatiheys Hänskin (2006) mukaan. Vihreät alueet kuvaavat tiheimmän kannan alueita, harmaa harvan kannan alueita. Valkoiset alueet ovat harvan kannan tai tyhjiä alueita. Vesistöt näkyvät kartassa vaalean harmaalla. Kartasta puuttuvat Pirkanmaan-, Pohjois-Savon- ja Varsinais-Suomen- (mukaan lukien Satakunnan) ELY-keskusten omien liito-oravarekisterien havainnot (yhteensä noin 9 300 kpl). ELY-keskusten rajat näkyvät kartassa.



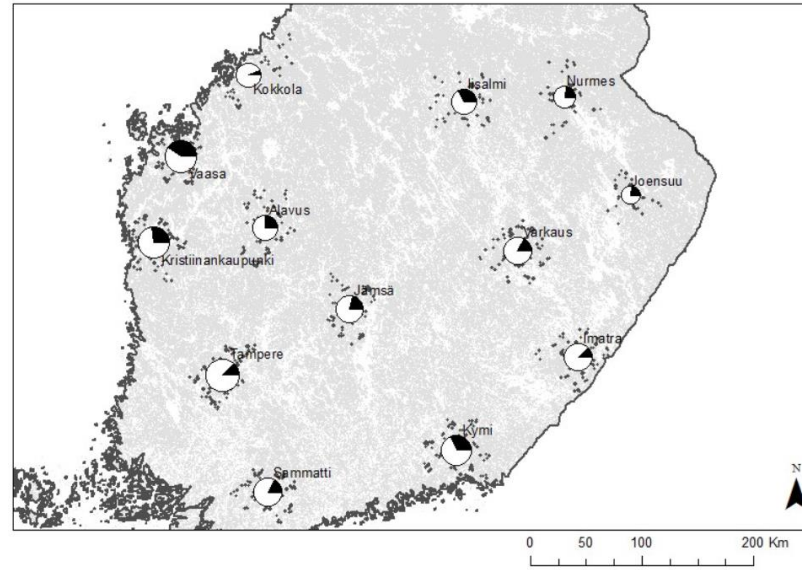
## Population density estimates vary in Finland

- Colored density estimates from the national population size survey 2006 (population study 2003-2005)
- Black dots: known flying squirrel locations in official species data system

Jokinen, Maarit: Liito-oravan lisääntymis- ja levähdyspaikkarajausten vaikuttavuus lajin suojelukeinona. Suomen Ympäristö 33/2012.

# Population trend estimation in Finland: annual surveys are based on samples 2006-

Data gathering by Natural History Museum Finland (Luomus),  
analyses for conservation status by Finnish Environment Centre SYKE



(Mäkeläinen, Sanna: Liito-oravan valtakunnallinen seuranta jatkuu - tärkeää tietoa lajinsuojeluun ja tutkimukseen. Press release 6.3.2018:  
<https://vanha.luomus.fi/fi/uutinen/liito-oravan-valtakunnallinen-seuranta-jatkuu-tarkeaa-tietoa-lajinsuojeluun-tutkimukseen>)

# Finnish flying squirrels mainly occur outside conservation areas

Known locations:

**9% conservation areas**

**24% urban areas**

**63% managed forests**

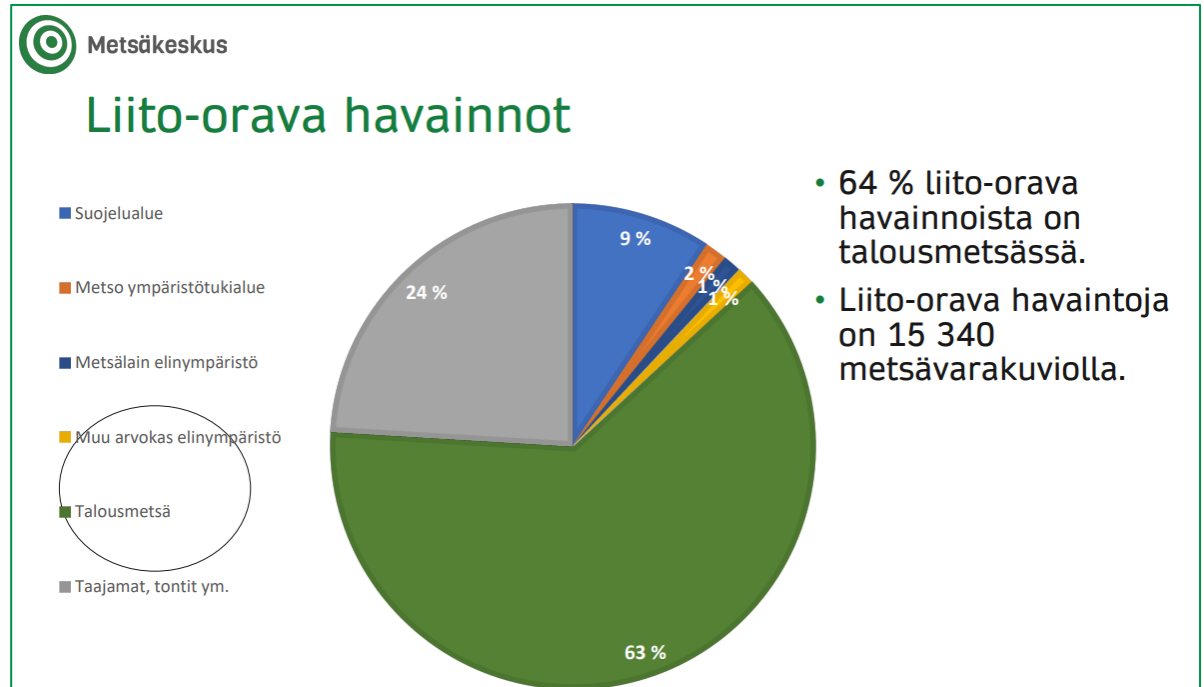
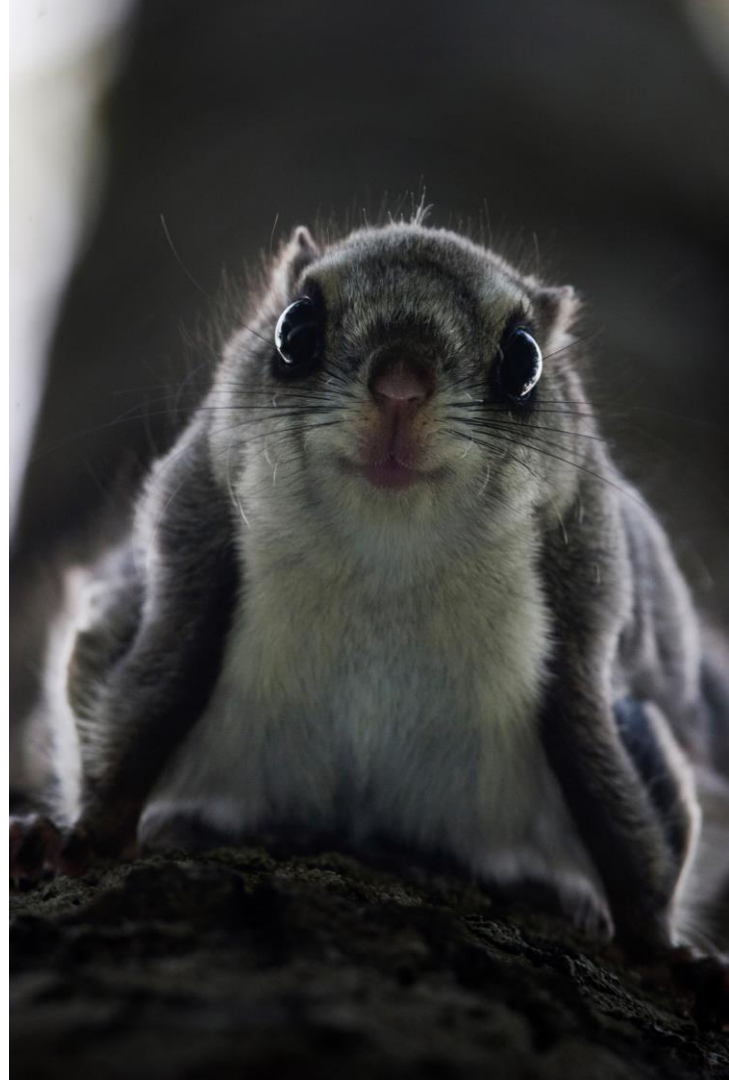


Figure: Asta Vaso, Liito-orava talousmetsässä-seminaari 7.2.2024

Nature Conservation Law and  
Habitats Directive IV(a):

**How NOT to deteriorate or destruct  
breeding sites and resting places,  
and how to  
maintain their ecological functionality?**

In Finland,  
responsibility is on a landowner or her/his  
representative. ELY Centre give advice.





# Description of the Flying squirrel conservation in Finland and Estonia (to be updated)



## Description of the current conservation legislation and management procedures of the Siberian flying squirrel (*Pteromys volans*) in Finland and Estonia

Anni Koskela & Eija Hurme, Metsähallitus, Parks & Wildlife Finland  
Tõnu Laasi, Estonian Environmental Board

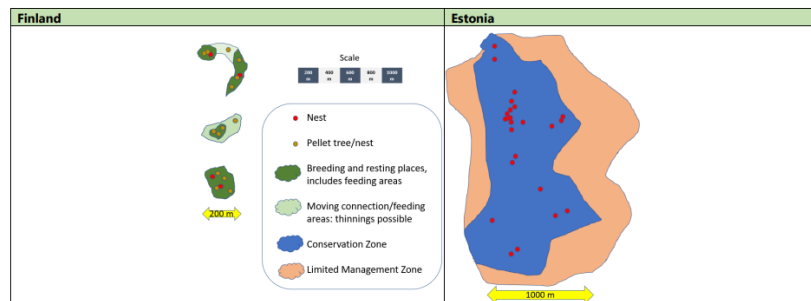
2022

Flying Squirrel LIFE  
LIFE17 NAT/FI/000469



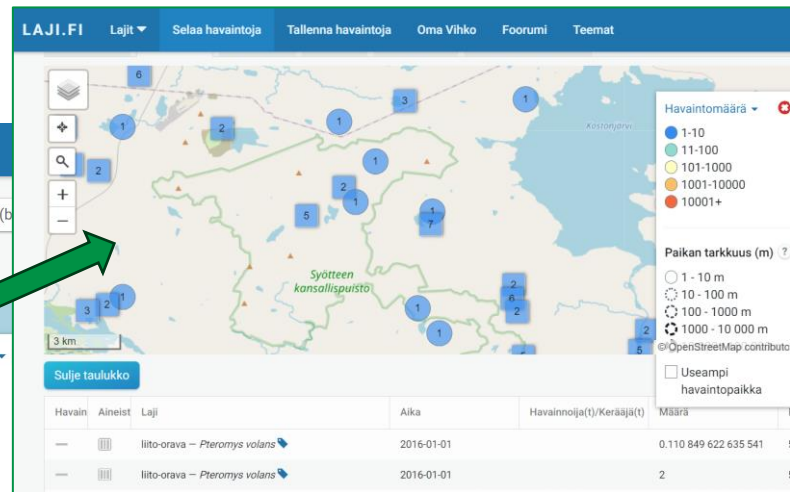
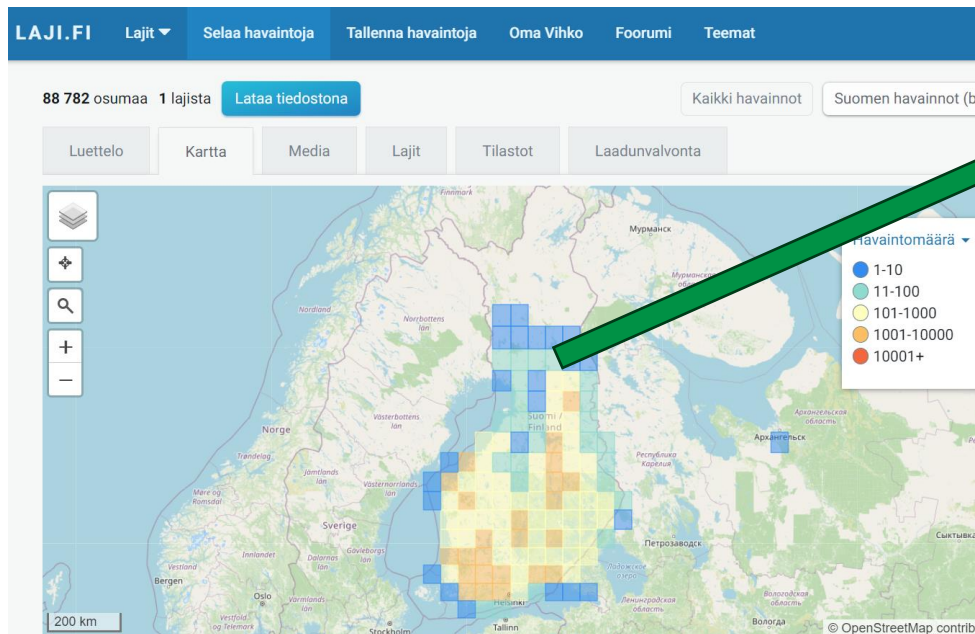
Cover photo: Rainer Cargellari/Vatavola,5

### 7. Safeguarding in practice: a schematic view



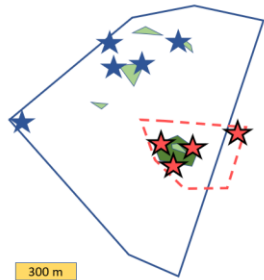
The selected practical approach in safeguarding the flying squirrel may have scale differences. In Finland, flying squirrel is often considered at a relatively small area at a time, at a scale of a forest cutting plan by a private landowner. Thus, the functionality of breeding sites and resting places is safeguarded by protecting key features at a focal private land area, case by case. In Estonia, each nesting tree is protected within a 25-meter radius at its minimum. However, as the aim is to protect all flying squirrel habitats as Species Protection Sites (SPS) or within other protection areas, safeguarding often leads to large Conservation Zones surrounded by Limited Management Zone, irrespective of the landowner.

# Open species data in Laji.fi service

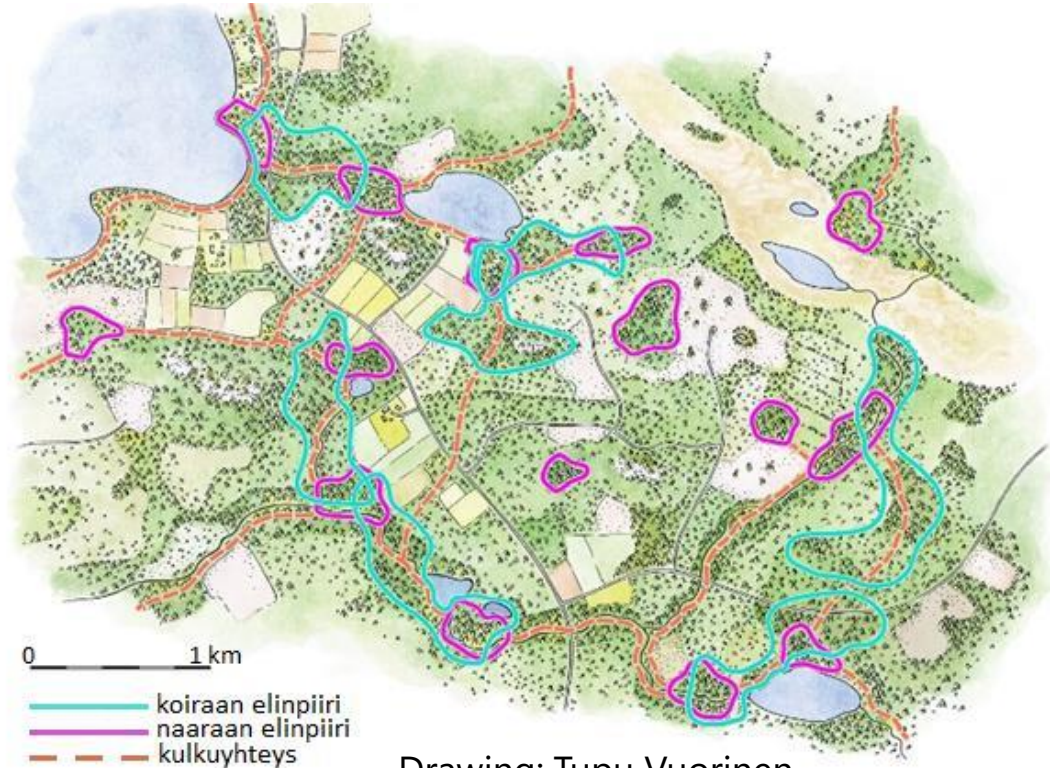


Existing data is accumulated, not a result of a thorough national survey  
→ A dot is only a sign to do more field work!

# Maintaining functional network of suitable habitats with moving connections needs planning at the landscape scale



- Naaraan elinpiiri: kaikki havainnot (keskiarvo 8,3 hehtaaria, vaihteluväli 2,7-26,6 ha)
- Koiraan elinpiiri: kaikki havainnot (keskiarvo 60 hehtaaria, vaihteluväli 3,7-132 ha)
- Naaraan ydinalue: 80-85% havainnoista (keskiarvo 4 kpl, vaihteluväli 1-6 kpl)
- Koiraan ydinalue: 80-85% havainnoista (keskiarvo 4 kpl, vaihteluväli 1-6 kpl)
- Naaraan pesä (keskiarvo 5 kpl, vaihteluväli 2-10)
- Koiraan pesä (keskiarvo 8 kpl, vaihteluväli 4-14)



Drawing: Tupu Vuorinen



# Flying Squirrel LIFE: co-operation & networks



Over 6 years:  
08/2018 - 03/2025



Metsähallitus, Parks & Wildlife Finland  
+ 17 beneficiaries from Finland and Estonia



Budget 8,9 M€  
(75 % EU LIFE)



JYVÄSKYLÄ



KUOPIO



KUOPION  
LUONNONTIETEELLINEN  
MUSEO



Suomen  
luonnonsuojeluliitto



KESKKONNAAMET

LUOMUS  
LUONNONTIETEELLINEN KEHITYSHARJO



Elinkeino-, liikenne- ja  
ympäristökeskus



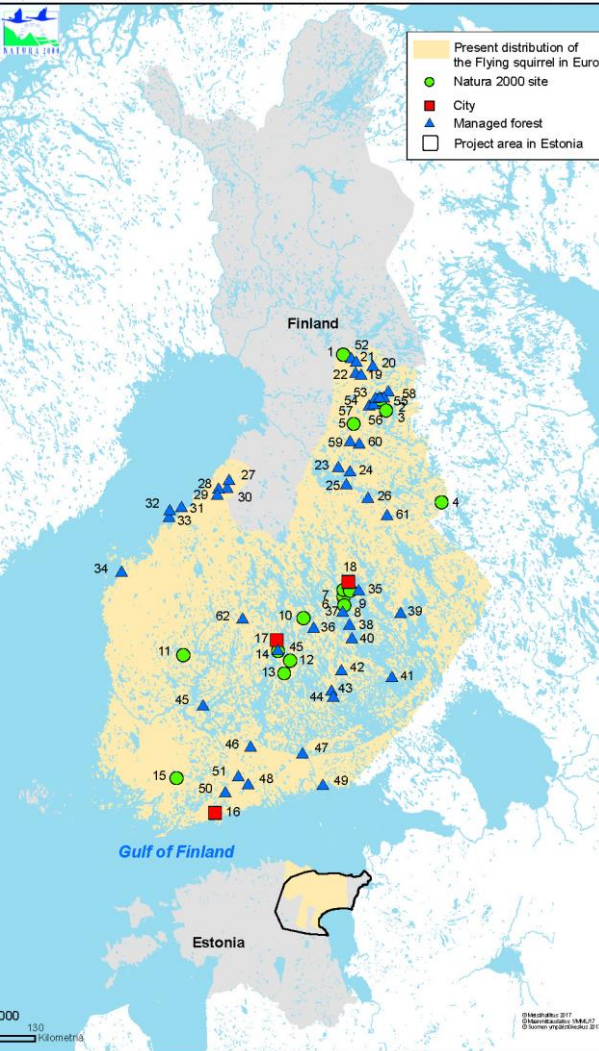
metsäkeskus



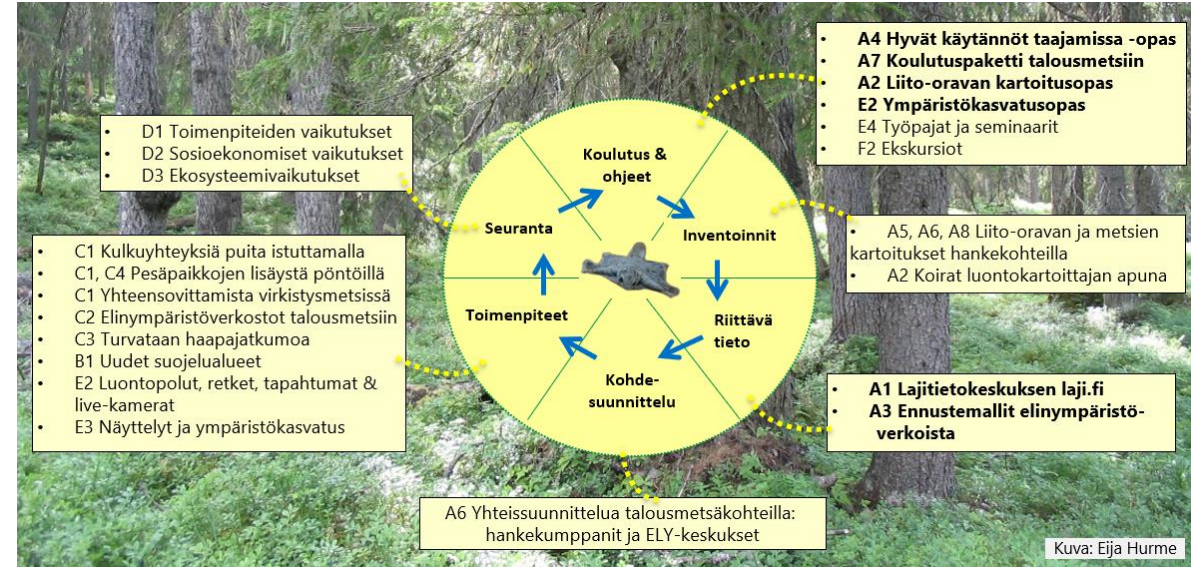
METSÄKORRALDUSE  
BÜROO







# Project activities in Finland: many activities together with partners







# Urban areas (A4, A5-C1-D1): Espoo, Jyväskylä & Kuopio

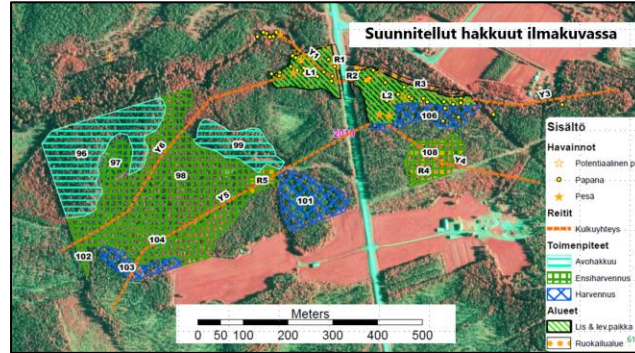
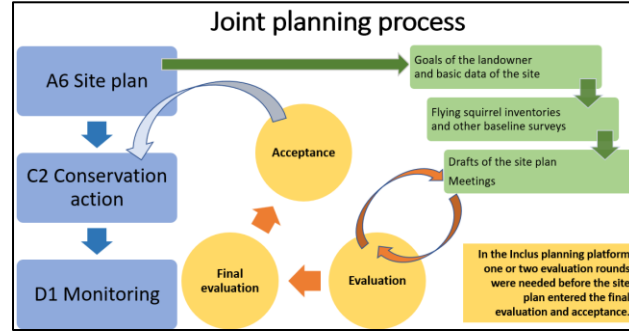


Photos: Radiotelemetry study (action A4) in Espoo (Laura Ahopelto).



Guide, radiotelemetry, 21 example sites & landscape optimization ready,  
Site plan summary & citizen questionnaire in progress

# Managed forests (A6-C2-D1 & A7): ~60 example sites



Guide ready, reports in progress





# Aspen continuity (A8-C3-D1)



Kivilampi project site in 2023

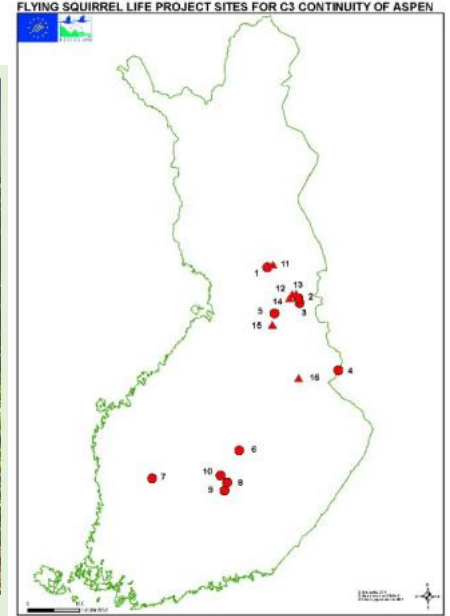
Inside the enclosure: aspen seedlings are growing



Outside the enclosure: aspen seedlings have been eaten by herbivores



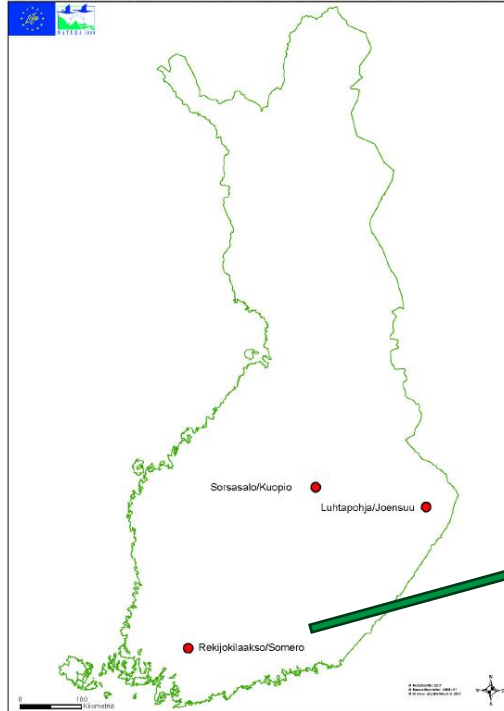
Photo: Saara Airaksinen



16 example sites:  
report of site plan summaries ready

# New conservation areas: 33 hectares (B1)

FLYING SQUIRREL LIFE ONE-OFF COMPENSATION PAYMENTS FOR NEW CONSERVATION AREAS



Rekijoki Natura 2000 area

Rekijoki is surrounded by agricultural fields and many remained forests are occupied by the Flying squirrel. B1/One off-compensations for 6 hectares will be established to the green areas not yet protected, after discussions with landowners.



- Flying squirrel location
- Private conservation area
- Area not yet protected
- Nature path location (E2)

0 1 2 km  
(C) VARELY 2016  
(C) SYKE  
(C) Maanmittauslaitos, tuustakarasteri, 08/2016

# Live cameras, nature paths, school visits, family excursions, nest box building days, FS walks, ... (E2)



Liito-oravaemo siirtää poikaset 16.6.2019 klo 02.20



*Photo: Guided trip to put up a nest box in Kuopio. One of the youngest participants on the trip shows how flying squirrel glides, action E2 (Anu Ruohomäki).*



# Loanable, temporal and permanent exhibitions & environmental education (E3)



Niko Nevalainen



Anni Koskela



# Monitoring effects of conservation actions (D1: C1-C4)

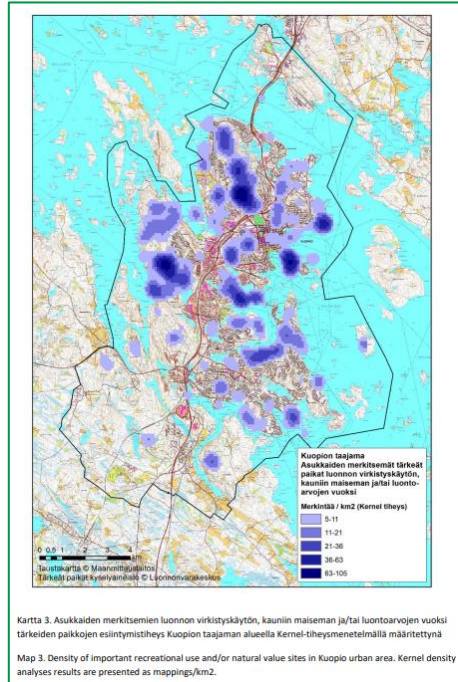
Photo: Anni Koskela



	1	1	Cuttings	1	1	1			
	1	1	Cuttings	1	1	1			
1	1	1	Cuttings	1	1				
1	1	1	Cuttings	1	1				
		1	Cuttings	1	1	1	1		
		1	Cuttings	1	1	1	1		
	1	x	Cuttings	1	1	1			
			Cuttings	1	1	1	1	1	1
0	1	0	Cuttings	1	1				
		1	Cuttings	1	1	1	0		
		1	Cuttings	0	1	0	0		
	1	0	Cuttings	0	0	1			
	1	0	Cuttings	0	1	0		0	
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		0	Cuttings	0	0	0			
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		0	Cuttings	0	0	0	0		
		0	Cuttings	0	0	0			

Monitoring period 2019-2024, report in progress

# Socio-economic effects of the project (D2)

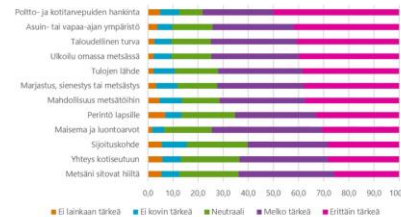


FS & recreation values in urban areas: ready

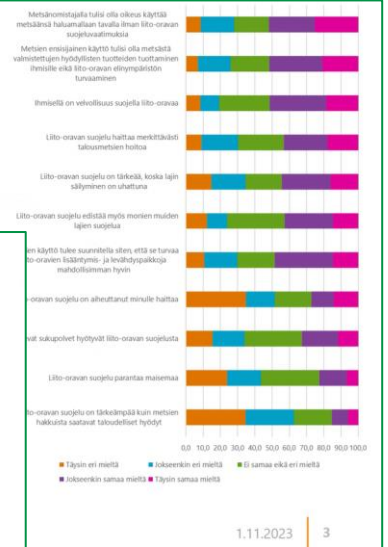
Attitudes towards FS are not that positive

Different attitude groups?

Forests provide multiple benefits to forest owners

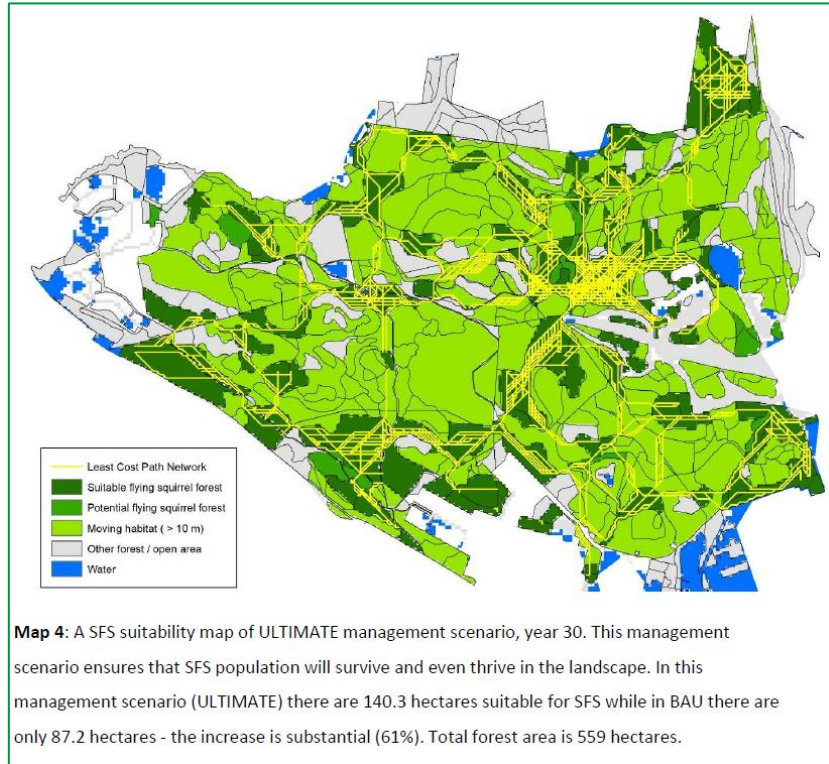


Distribution of answers to the question "How important do you consider the following things for your own forests?".



Attitudes (report in progress)

# Ecosystem effects of the project (D3)



Report ready of modelling future scenarios:

Estimated effects of different forestry strategies after 30 years at three study landscapes, e.g.:

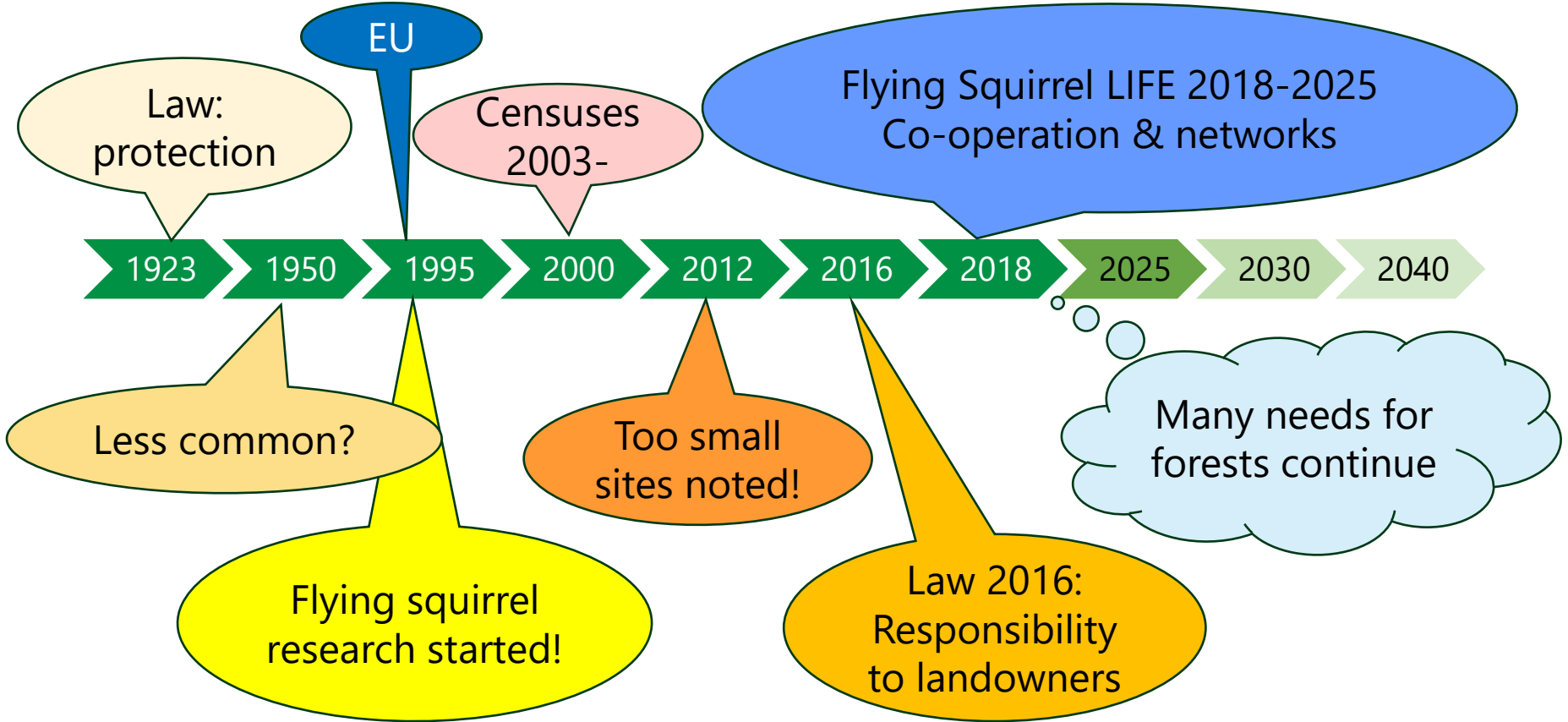
- ❖ BAU (Business As Usual)
- ❖ Maximize FS habitat
- ❖ Maximize FS habitat & moving connections



# Co-operation & networks (F1-F2) → exchange of knowledge & learning processes



# Future direction?





# Conclusions

- ❖ Flying squirrel needs special attention: an umbrella species for forest biodiversity
- ❖ Flying Squirrel LIFE brought stakeholders together and increased understanding
- ❖ Future is also in our hands



Flying Squirrel LIFE (LIFE17 LIFE/NAT/FI/000469)

<https://www.metsa.fi/en/project/flying-squirrel-life/>