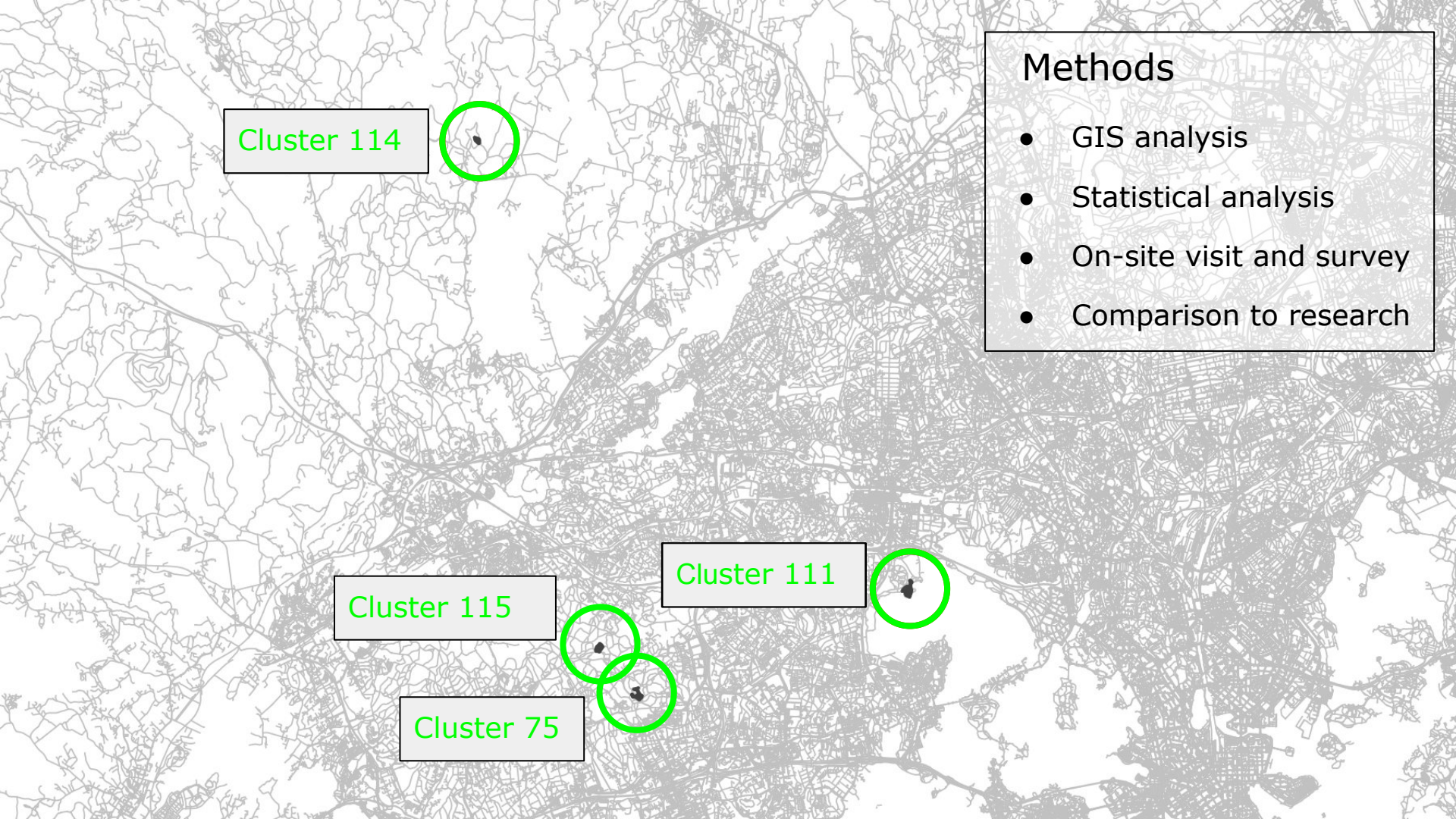




# **A story of Espoo's nature**

By Riccardo Costa, Nils Fahlenbock, Joonas Jalava, Juuso Virtanen



Cluster 114



Cluster 115



Cluster 75

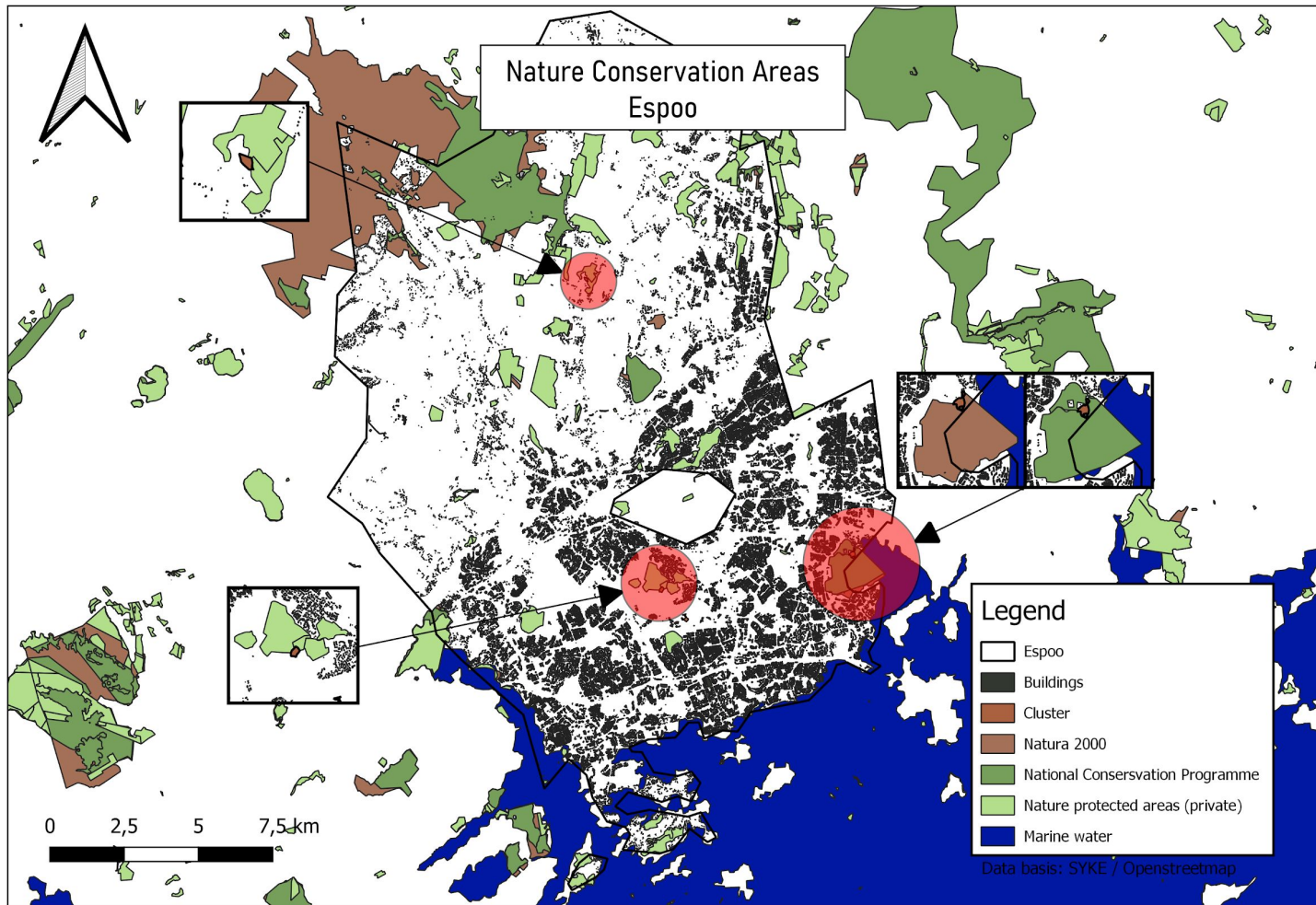


Cluster 111



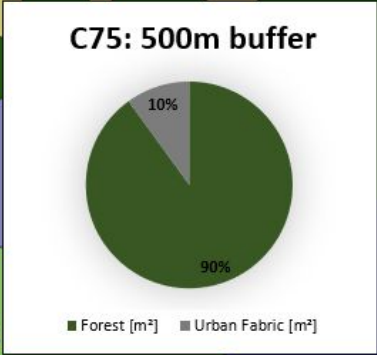
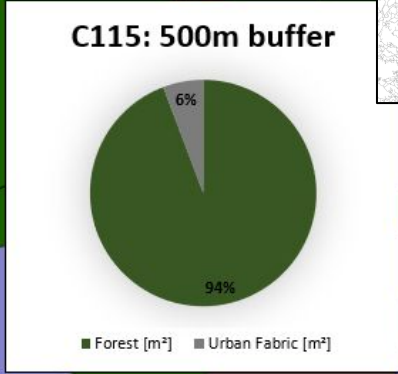
### Methods

- GIS analysis
- Statistical analysis
- On-site visit and survey
- Comparison to research



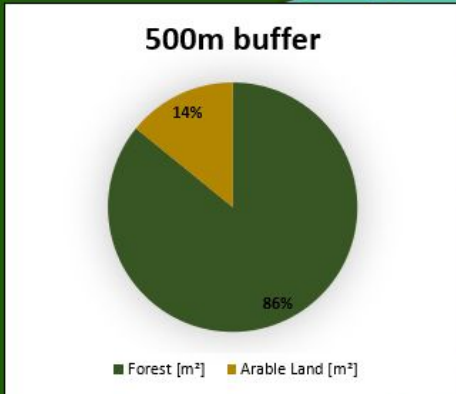


Landuse Cluster 75 and 115  
(Central Park Espoo)



Data basis: SYKE / City of Espoo

## Landuse Cluster 114



### Legend

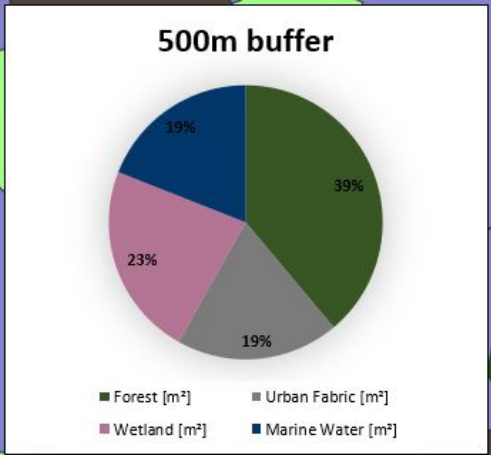
- Cluster
- Corine Land-use
  - Arable land
  - Forests
  - Heterogeneous agricultural areas
  - Inland waters

Data basis: SYKE / City of Espoo

0 500 1.000 m



# Landuse Cluster 111



### Legend

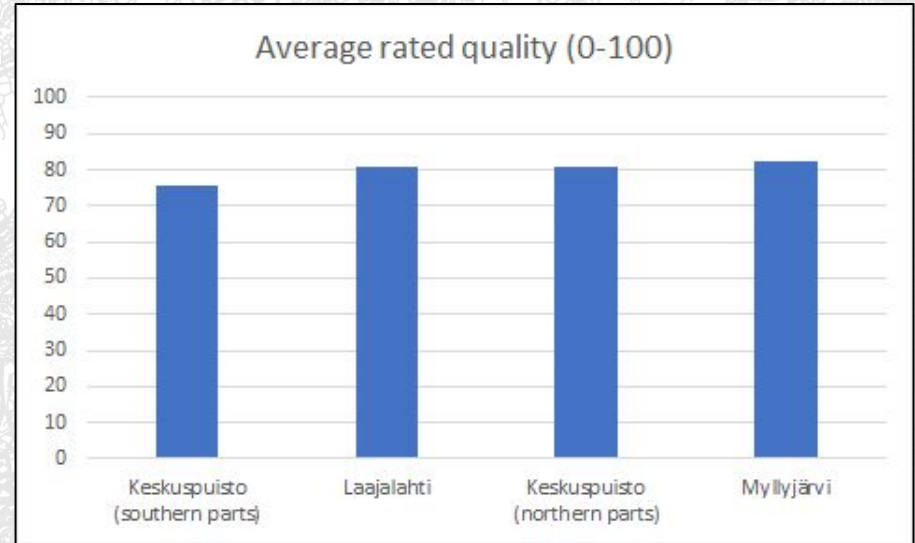
- Cluster
- Corine Land-Use
  - Arable land
  - Coastal wetlands
  - Forests
  - Heterogeneous agricultural areas
  - Industrial, commercial and transport units
  - Urban fabric



Data basis: SYRÉ / City of Espoo

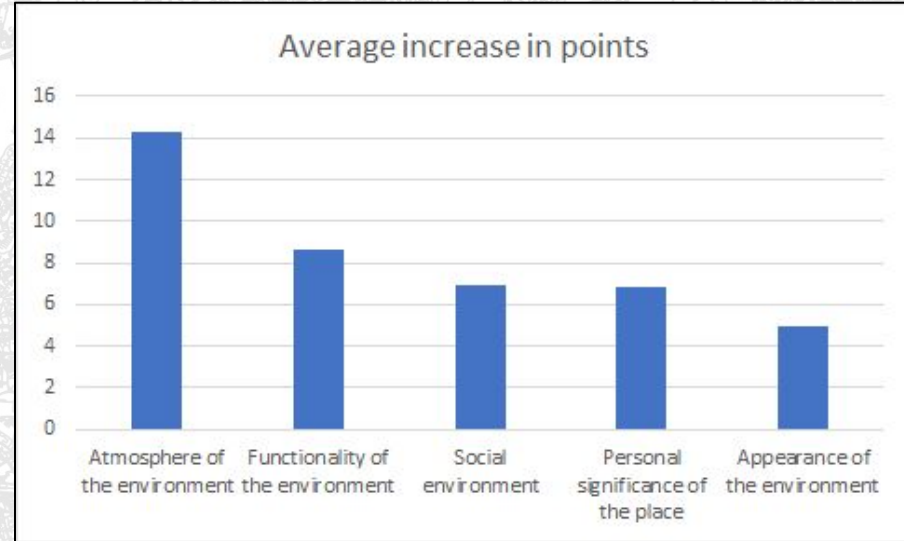
# Overall rating

- Very high overall ratings and similar location reduced the possibility to find out any correlations.
- Many of the analyses were thus performed for the whole Espoo dataset.



# Observations from the whole dataset

- Atmosphere was clearly the most meaningful single aspect, aesthetics was on the last place.
- Visit frequency and quality had a very slight positive correlation.





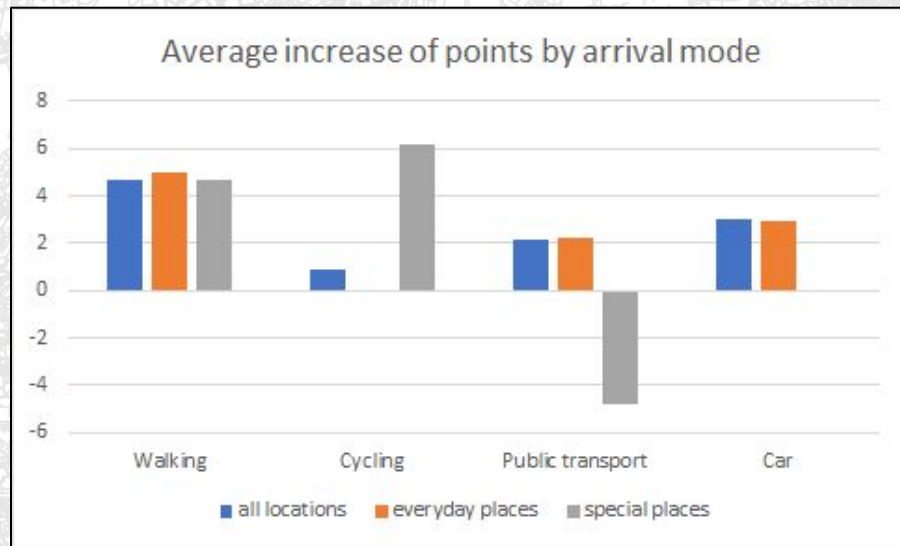
# Observations from the whole dataset

- Atmosphere was clearly the most meaningful single aspect, aesthetics was on the last place.
- Visit frequency and quality had a very slight positive correlation.
- Leisure and second home are clearly positive places, while personal services are often rated negatively



# Observations from the whole dataset

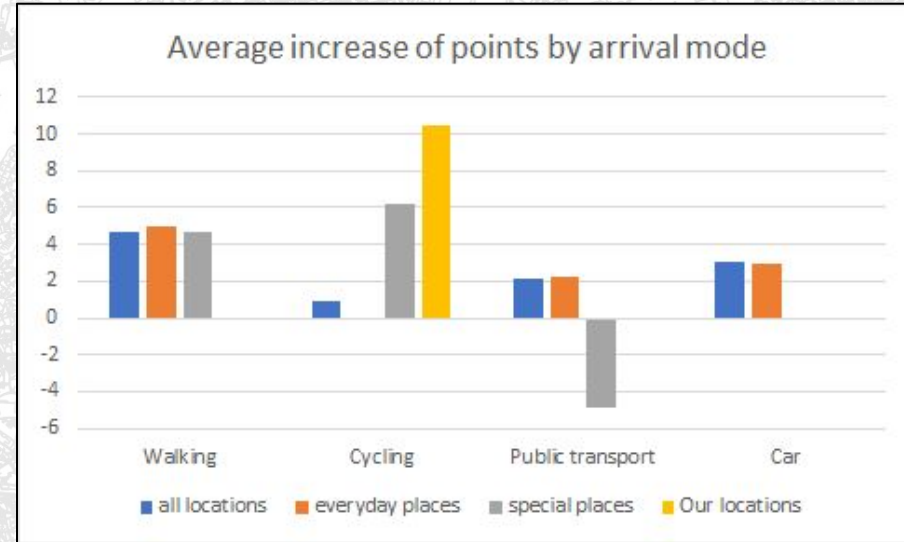
- Cyclers give lower average points for locations than others, except in case of special places.
- Using public transport for non-everyday locations affects negatively peoples opinion of location.
- Relation to cycling networks and quality of public transport service?



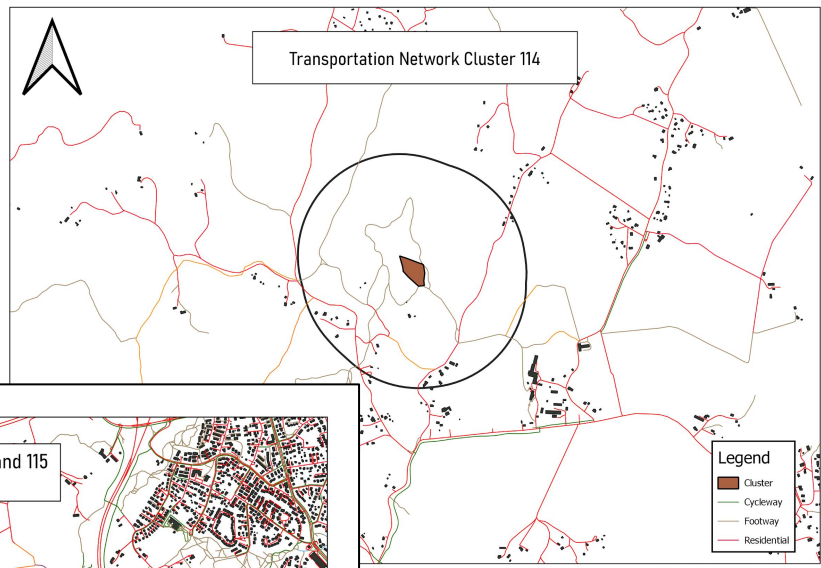
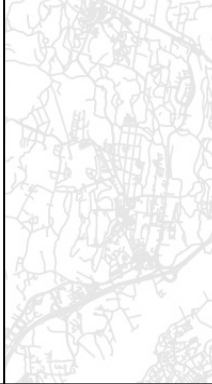
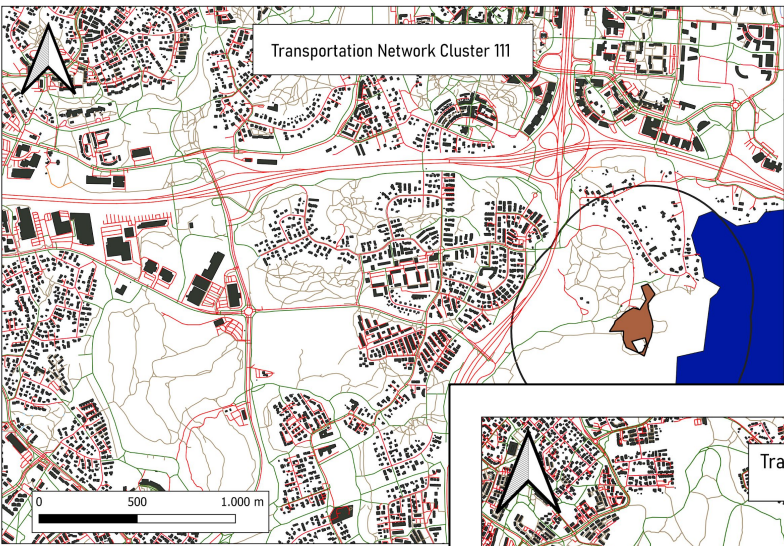
Missing bar = too much variance, correlation is insignificant

# Observations from our locations

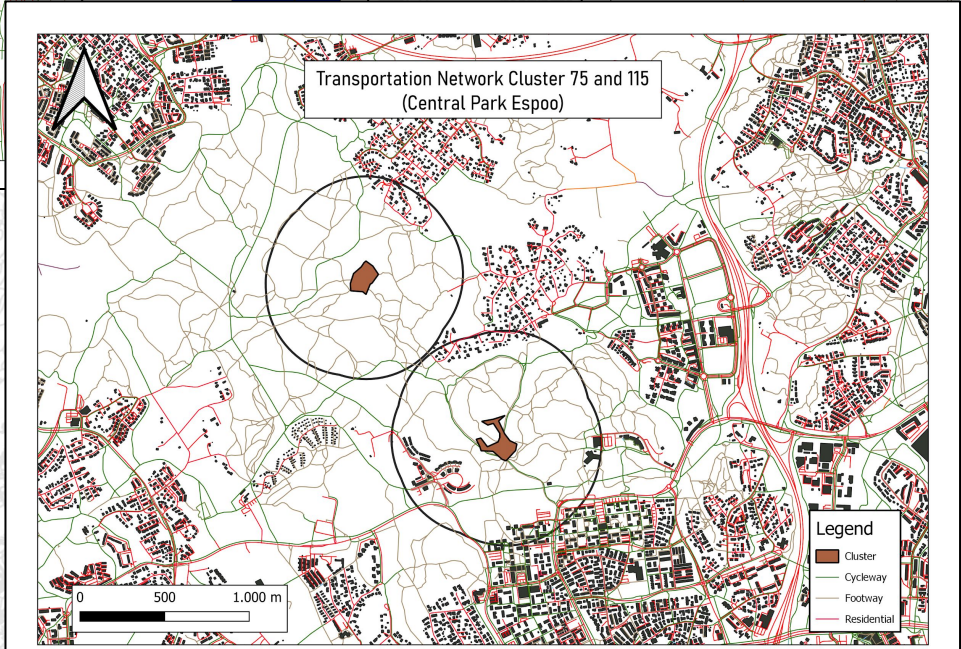
- In forest areas cycling is clearly very appreciated moving form
- People who visited our place came
  - most often by walking and bicycle
  - rarely by PT or car



Missing bar = too much variance, correlation is insignificant

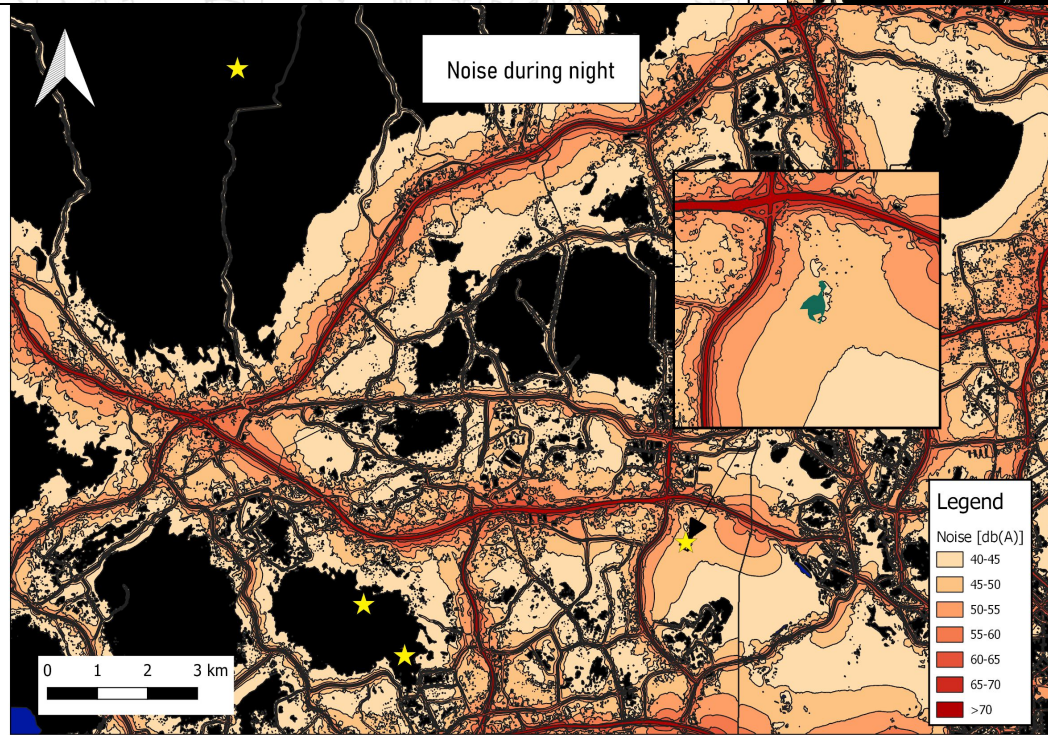
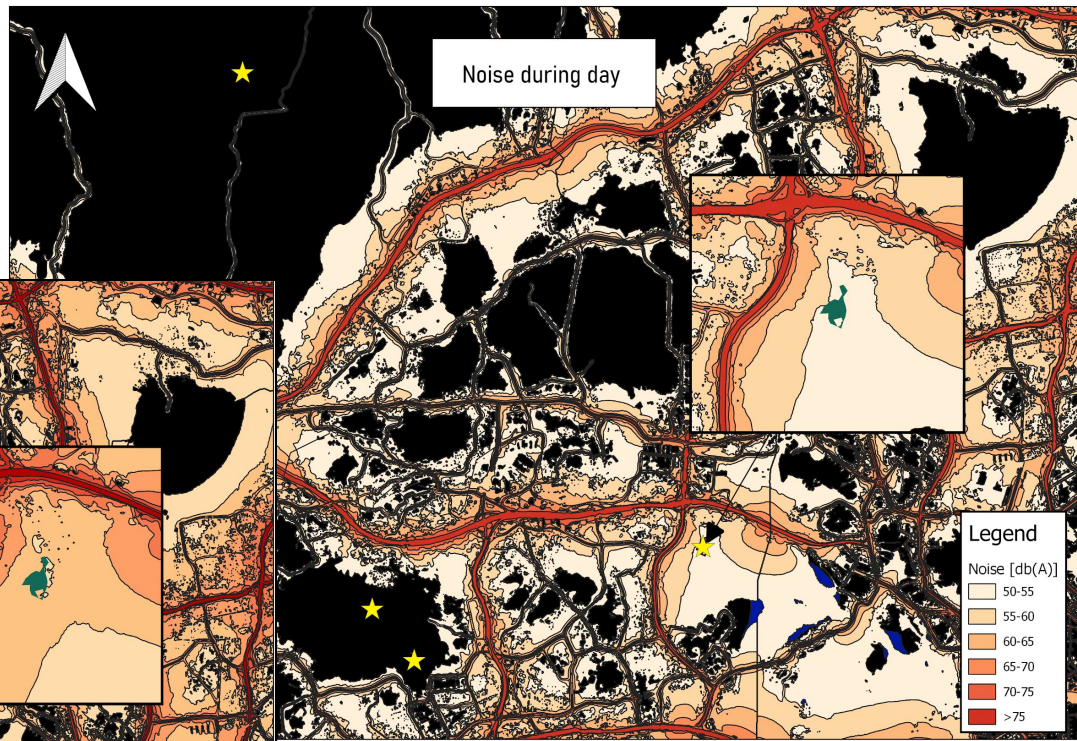
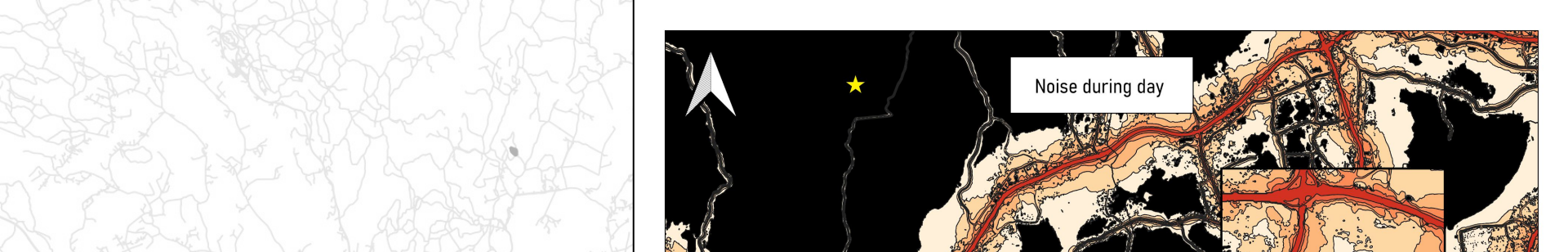


Data basis: SYKE / City of Espoo



Data basis: SYKE / City of Espoo





Data basis: SYKE

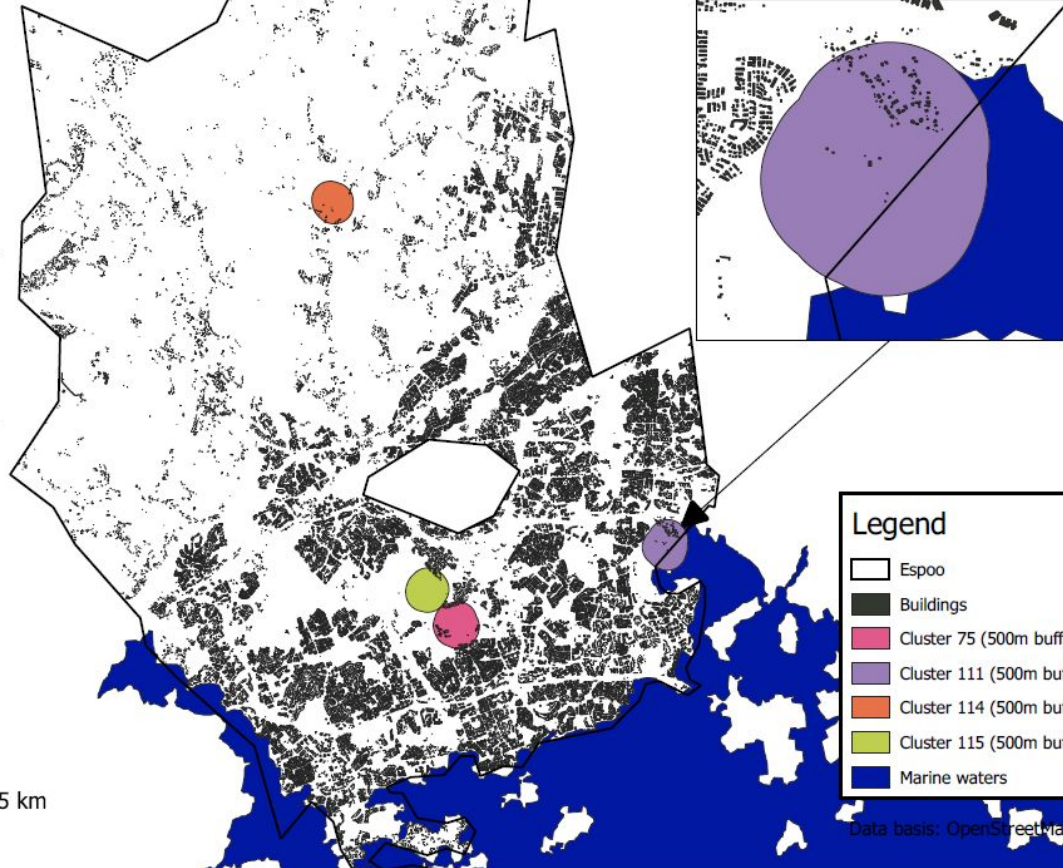


Data basis: SYKE



## Building density around Cluster

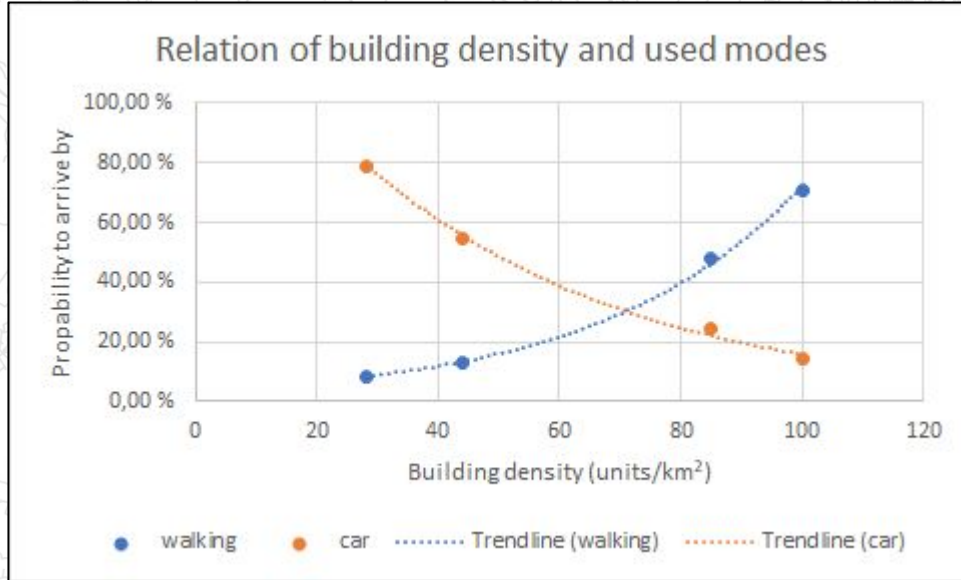
Building density:  
Cluster 75: 100 Units/km<sup>2</sup>  
Cluster 111: 85 Units/km<sup>2</sup>  
Cluster 114: 28 Units/km<sup>2</sup>  
Cluster 115: 44 Units/km<sup>2</sup>



0 2,5 5 7,5 km

Data basis: OpenStreetMap

# Building density and transport modes



Very strong correlation between building density and use of modes.

Aalto Urban Exper... Data -

Download Table Map Exit

Add Data Total: 88, 1/2

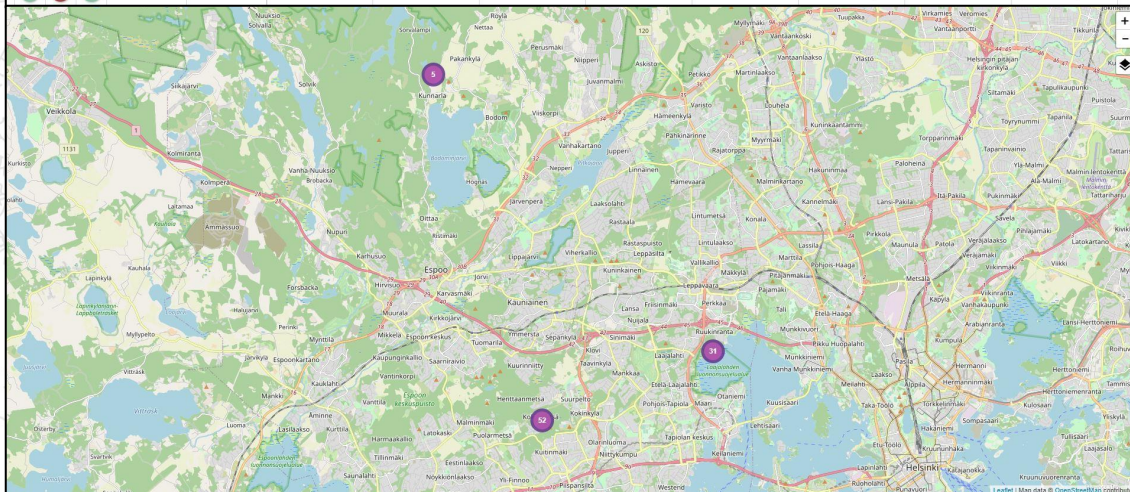
Filter by title

FROM 13 FEB. 21 TO 21 FEB. 21 NEWEST X

View	Delete	Edit	Title	Created At	Location	Date	Time	How many people?	Are any of these people child...	Are they walking their dog(s)...	How people are moving around?	What activities people are part...	Ad
			88ec093-993c-463b-	21st Feb, 2021	60.180214, 24.728559	21/02/2021	14:50:00	Two persons	No children	No animals	On foot	Walking	
			f70d534-37ad-4a65-	21st Feb, 2021	60.17887, 24.725417	21/02/2021	14:44:00	Group of three or more	No children	No animals	With skis	6 skiers	
			649f8f6-4856-4435-	21st Feb, 2021	60.178885, 24.724571	21/02/2021	14:43:00	Single person	No children	No animals	With skis	Skier using the jungle gym	
			a468f8ec-6589-402f-8-	21st Feb, 2021	60.178323, 24.723694	21/02/2021	14:42:00	Group of three or more	No children	No animals	With skis	Over 5 skiers	
			8c52176d-acd4-437a-	21st Feb, 2021	60.180464, 24.723383	21/02/2021	14:39:00	Two persons	No children	No animals	On foot	Walking	
			4d91966c-1103-46ad-	21st Feb, 2021	60.180905, 24.723552	21/02/2021	14:39:00	Group of three or more	Yes, one child	No animals	On foot	Strollers	
			e8f85899-bcd9-4250-	21st Feb, 2021	60.181483, 24.72381	21/02/2021	14:38:00	Group of three or more	No children	No animals	With skis	12 skiers	
			a2bd9099-463c-4463-	21st Feb, 2021	60.182241, 24.724806	21/02/2021	14:37:00	Single person	No children	No animals	On foot	Walking	
			ef16e8d7-1400-4827-	21st Feb, 2021	60.182672, 24.724979	21/02/2021	14:36:00	Two persons	No children	No animals	On foot	Walking	
			e5566714-e903-404e-	21st Feb, 2021	60.183331, 24.725078	21/02/2021	14:35:00	Group of three or more	No children	No animals	With skis	7 skiers	
			b30e1368-43d4-4a35-	21st Feb, 2021	60.183731, 24.72541	21/02/2021	14:34:00	Group of three or more	No children	No animals	With skis	3 skiers	
			6fc10f2-1829-4940-9-	21st Feb, 2021	60.184406, 24.72496	21/02/2021	14:34:00	Group of three or more	No children	No animals	On foot	4 walking	
			a706c999-5004-4618-	21st Feb, 2021	60.18446, 24.724663	21/02/2021	14:32:00	Group of three or more	No children	No animals	With skis	Over 10 skiers	
			974a134d-ad46-4603-	21st Feb, 2021	60.18477, 24.722887	21/02/2021	14:31:00	Group of three or more	No children	No animals	On foot	2*2 walking	
			1d7a6c0f-8a00-40fe-	21st Feb, 2021	60.184804, 24.722725	21/02/2021	14:30:00	Two persons	No children	Yes, one or several dogs	On foot	2 persons and 2 dogs	

On-site visits, each cluster was visited two times on different days. Data gathered:

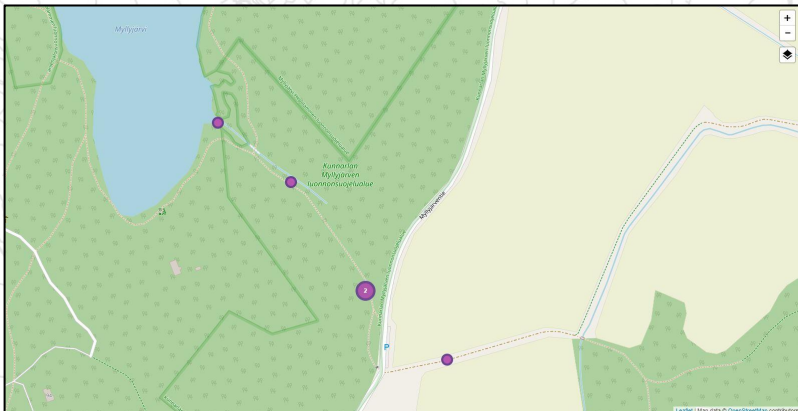
- Location
- Date & time
- Number of persons
  - Children
  - Animals
- How were they moving around
- What activities these persons were doing at the time



Data was gathered using Epicollect 5 platform. Project can be found by name "Aalto Urban Experience PPGIS"

<https://five.epicollect.net/project/aalto-urban-experience-ppgis>



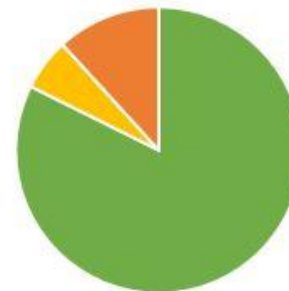


## On-site visit: Cluster 114 (Myllyjärvi)

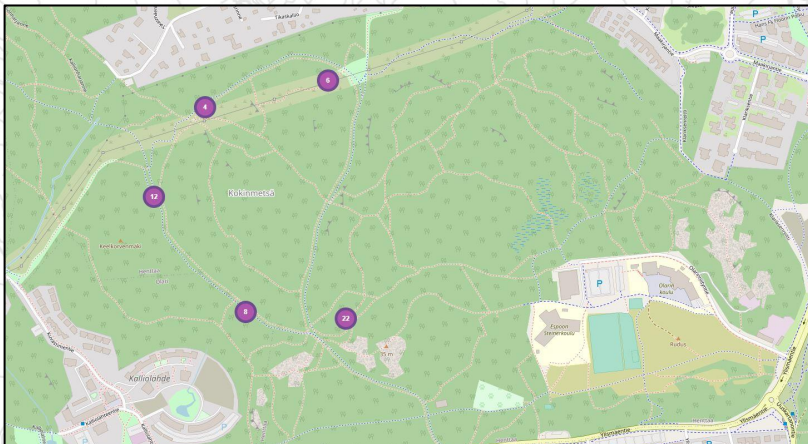
- Remote location
- Not very accessible
- Peaceful and quiet place (during winter)
- Natural and wild (nature reserve)
- Water element



Cluster 114 (Myllyjärvi)



■ People on foot (14) ■ Skiers (1) ■ People with snowshoes (2)

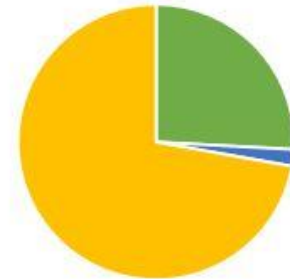


## On-site visit: Cluster 75 (Espoo Central Park)

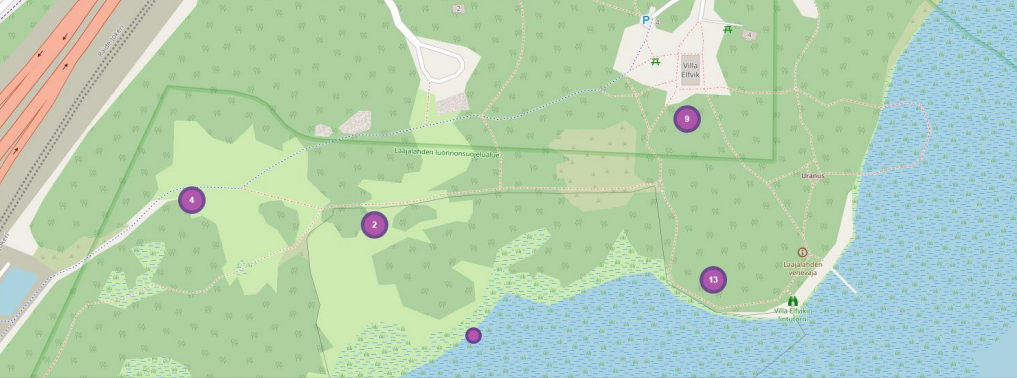
- **Crowded**
- Multiple routes and trails
- Easily accessible from various directions
- Natural and wild (some parts are nature reserves)



## Clusters 75 and 115 (Espoo Central Park)

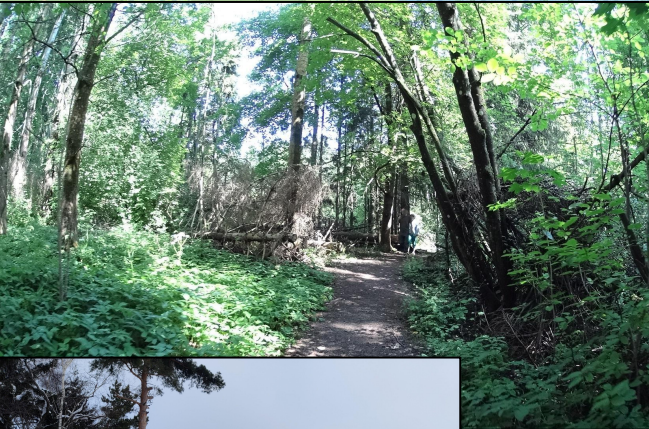


■ People on foot (53) ■ Cyclist (4) ■ Skiers (148+)



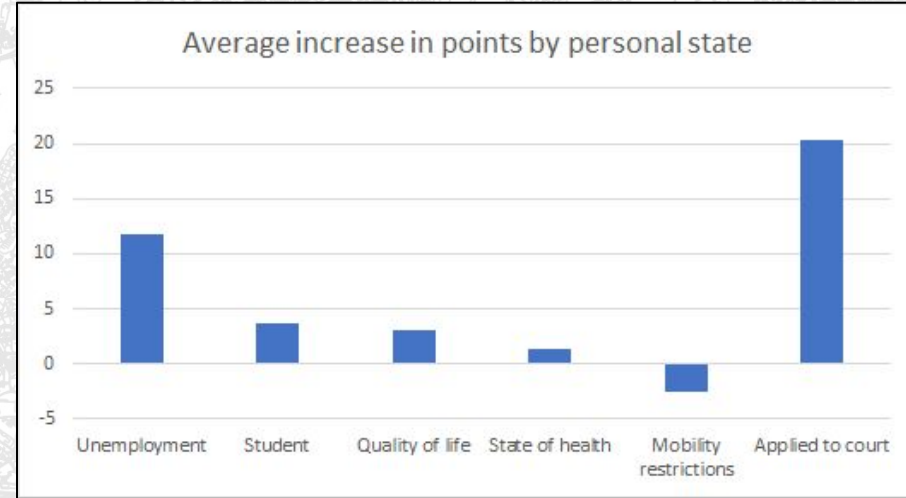
## On-site visit: Cluster 111 (Laajalahti, Villa Elfvik)

- Currently not very accessible due to Kehä I and Jokeri Light Rail construction sites)
- Water element
- Popular bird watching spot
- Natural and wild (nature reserves)



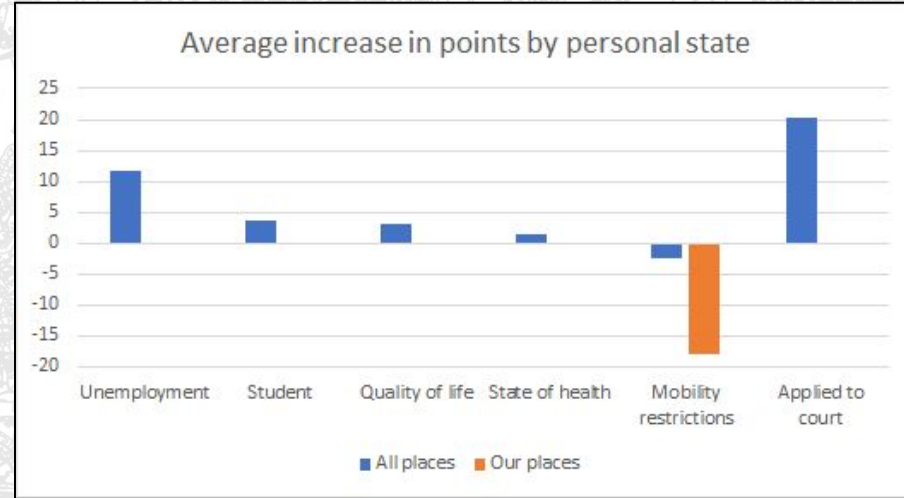
# Observations from whole dataset by demographics

- People usually value places more if they are:
  - Unemployed or student
  - Healthy, with no mobility restrictions
  - Have high quality of life
  - Have applied to court on cities decisions
- Health issues causing mobility restrictions cause huge decrease in value for forest locations
- Forest places are slightly favored by
  - Educated people
  - People with low quality of life



# Observations from whole dataset by demographics

- People usually value places more if they are:
  - Unemployed or student
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Missing bar = too much variance, correlation is insignificant

# Conclusions

- Green natural areas are often places of active movement and may discriminate people with personal mobility restrictions
  - Some routes in the forest should be designed by higher accessibility standards.
  - Duckboards (pitkospuut) in Laajalahti could be designed for wheelchair accessibility.



- As natural areas were more often visited by foot or bicycle than by car or public transport, it is important to leave enough forests close to built areas.
- Possibilities to enhance public transport to non-everyday areas should be examined, as should be cycling solutions in everyday environments (accessibility).
- Protect the natural green areas!



Thank you for listening to our story!

## Links to Literature:

- Smoothness of walking and cycling and presence of nature are positive quality factors (Kyttä et al. 2013)
- Correlation between green proportion and positive experiences (Kyttä et al. 2013)
- Frequency of visiting places is a determinant for positive experiences (Korpela et al. 2008 / Stigsdotter et al. 2010 / Pretty et al. 2010)
- Quality of life influences the nature experience positive or negative (Korpela et al. 2008)
- Access to green spaces increases the physical activity of individuals - physical exercise improves mental health (Pretty et al. 2010 / Rethorst et al. 2009)



# References

- Korpela, Kalevi M.; Ylén, Matti; Tyrväinen, Liisa; Silvennoinen, Harri (2008): Determinants of restorative experiences in everyday favorite places. In: *Health & place* 14 (4), S. 636–652. DOI: 10.1016/j.healthplace.2007.10.008.
- Kyttä, Marketta; Broberg, Anna; Tzoulas, Tuija; Snabb, Kristoffer (2013): Towards contextually sensitive urban densification: Location-based softGIS knowledge revealing perceived residential environmental quality. In: *Landscape and Urban Planning* 113 (1), S. 30–46. DOI: 10.1016/j.landurbplan.2013.01.008.
- Pretty, J. N.; Barton, J.; Colbeck, I., et al., 2010"Health Values from Ecosystems", Cambridge, Vereinigtes Königreich, <http://uknea.unep-wcmc.org/LinkClick.aspx?fileticket=S901pJcQm%2fQ%3d&tabid=82>, Zugriff am: 04.01.2019
- Rethorst, C. D.; Wipfli, B. M.; Landers, D. M., 2009"The Antidepressive Effects of Exercise: A Meta-Analysis of Randomized Trials" in: *Sports medicine (Auckland, N.Z.)* 39, Nr. 6, S. 491–511
- Stigsdotter, U. K.; Ekholm, O.; Schipperijn, J., et al., 2010"Health promoting outdoor environments-associations between green space, and health, health-related quality of life and stress based on a Danish national representative survey" in: *Scandinavian journal of public health* 38, Nr. 4, S. 411–417