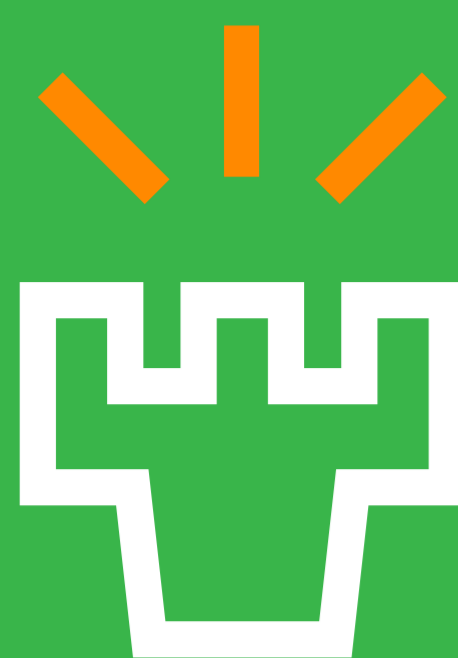




Urban planning for population physical activity, health and wellbeing – introduction to the RECIPE project



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Background

- Disease prevention in contemporary urban planning has largely been neglected.
- Physical activity (PA) lowers the non-communicable diseases and mortality risk, and is associated with improved immune system.
- PA is a feasible way of improving physical and mental health in a time of pandemic and social isolation.
- Urban environments and lifestyles lack elements that are important for immune functioning, and the prevalence of immune-mediated diseases has increased rapidly.
- According to a biodiversity hypothesis they might be due to biodiversity loss in modern urbanized societies

Aim of the study

- To study which residential area features are associated with PA, immunological and subjective health and what are the possible pathways.
- To reveal the changes in PA during Covid-19 pandemic.

Materials and Methods

- The study will pool several population based Finnish birth cohorts (1945, 1966, 1986) and register databases on health behaviors, health and socioeconomic factors.
- Residential environment features collected by Geographic information system based objective and subjective data on residential environment.
- PA was measured with Polar Active and Hookie and OURA ring accelerometers.
- Machine learning methodology was used to create individual profiles of PA.
- Mobile tracking data (Telia Crowd Insights) in May and June from years 2019 and 2021 collected to analyse the change in PA during pandemic.
- Perception of the participant's residential environment by public participatory GIS -questionnaire (Maptionnaire) in 2022-2022 (n=1394)

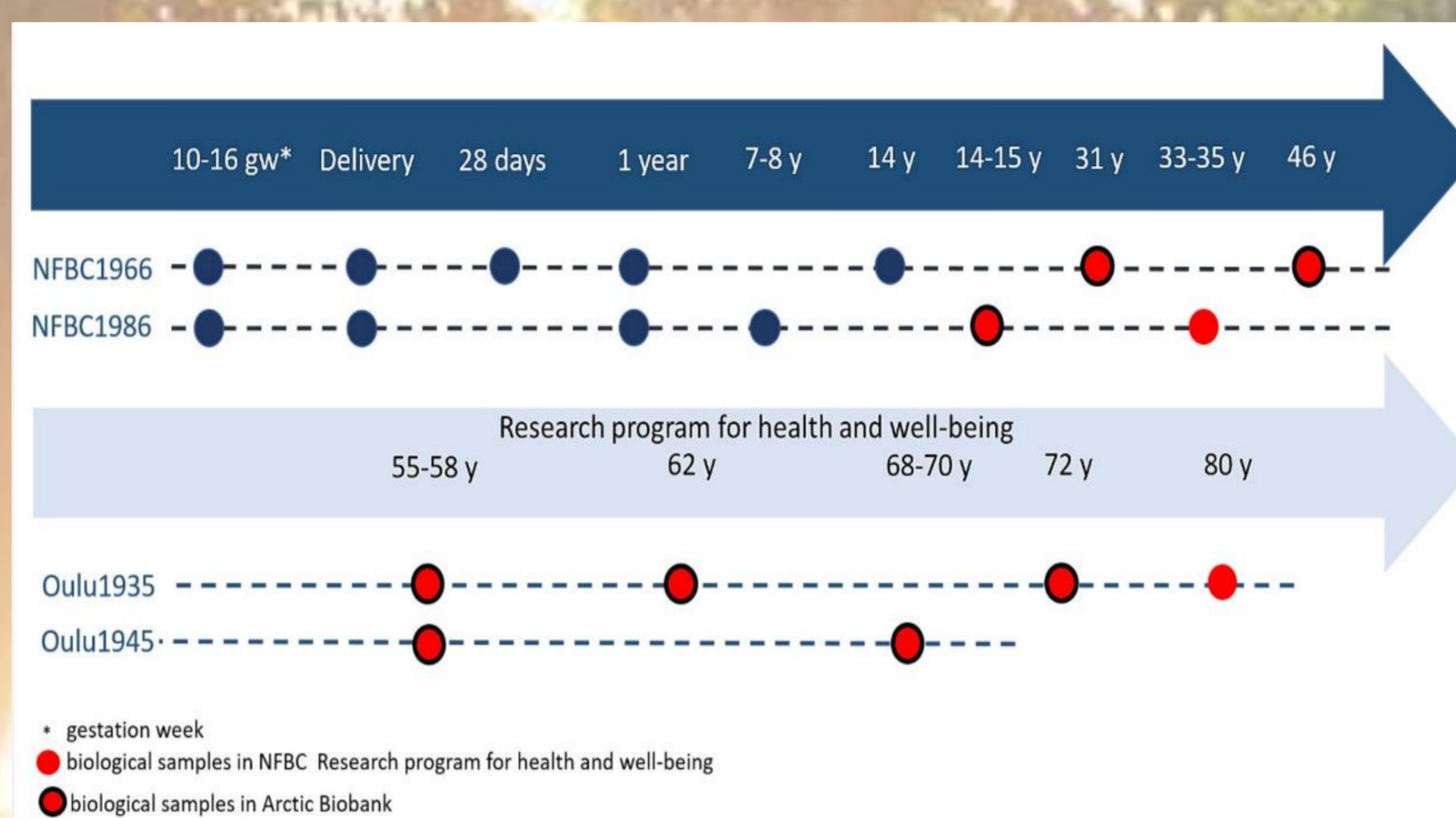


Fig 1. Population based Northern Finland Birth Cohorts 1966 and 1986.



Fig 2. Residential environment variables within a 1 km buffer (Figure by Soile Puhakka).

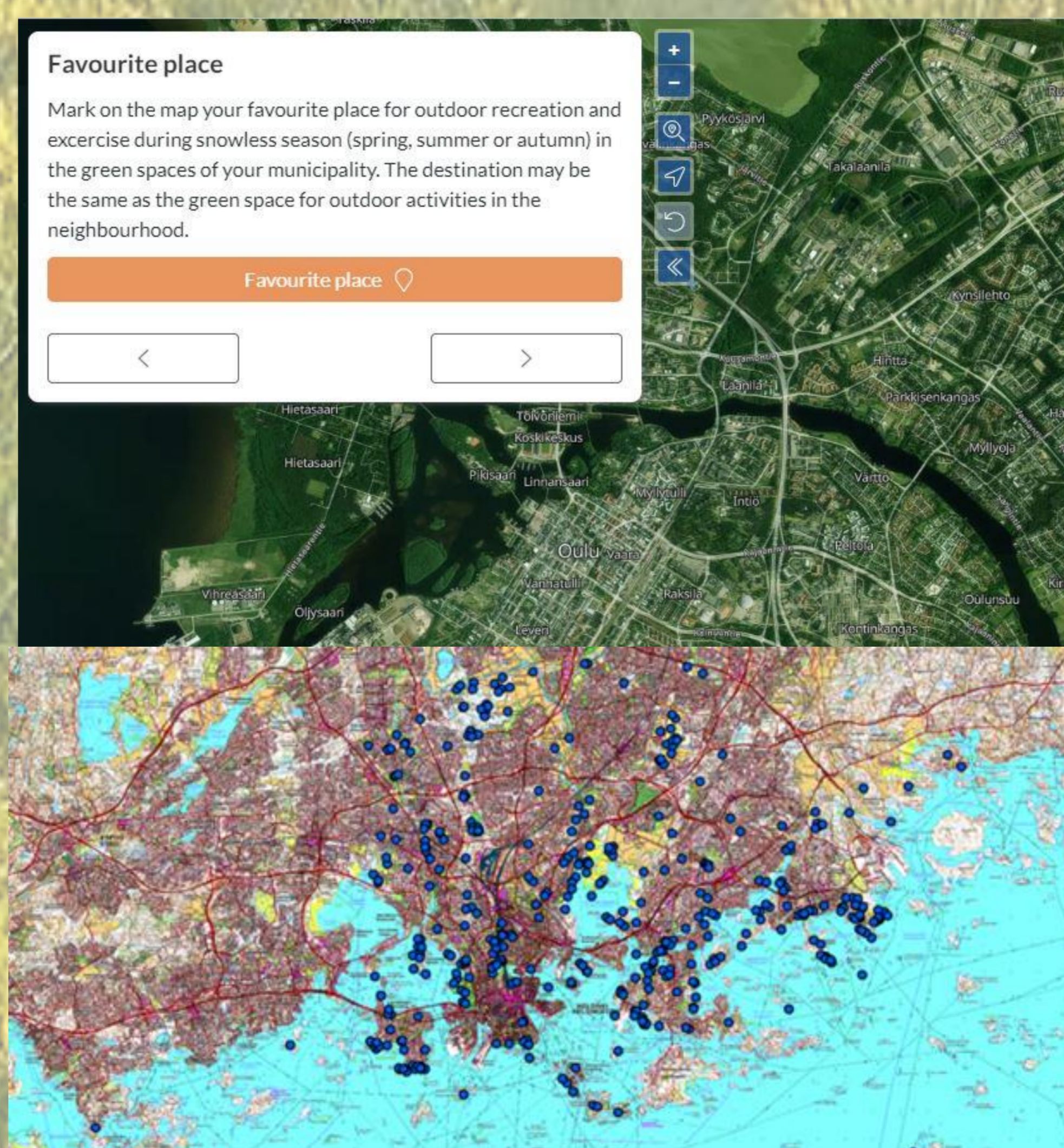


Fig 3. Mapping of favourite outdoor recreation places by PPGIS of the citizens living in Oulu, Finland (Figures by Katja Kangas)

Results

- Our preliminary results showed that
 - Biodiversity and geodiversity were associated with PA, health and wellbeing
 - Residential areas with high density and mixed land use seem to promote walking and cycling.
 - Green residential areas were associated with higher amount of light PA.
 - Nature relationship seems to be positively associated with PA

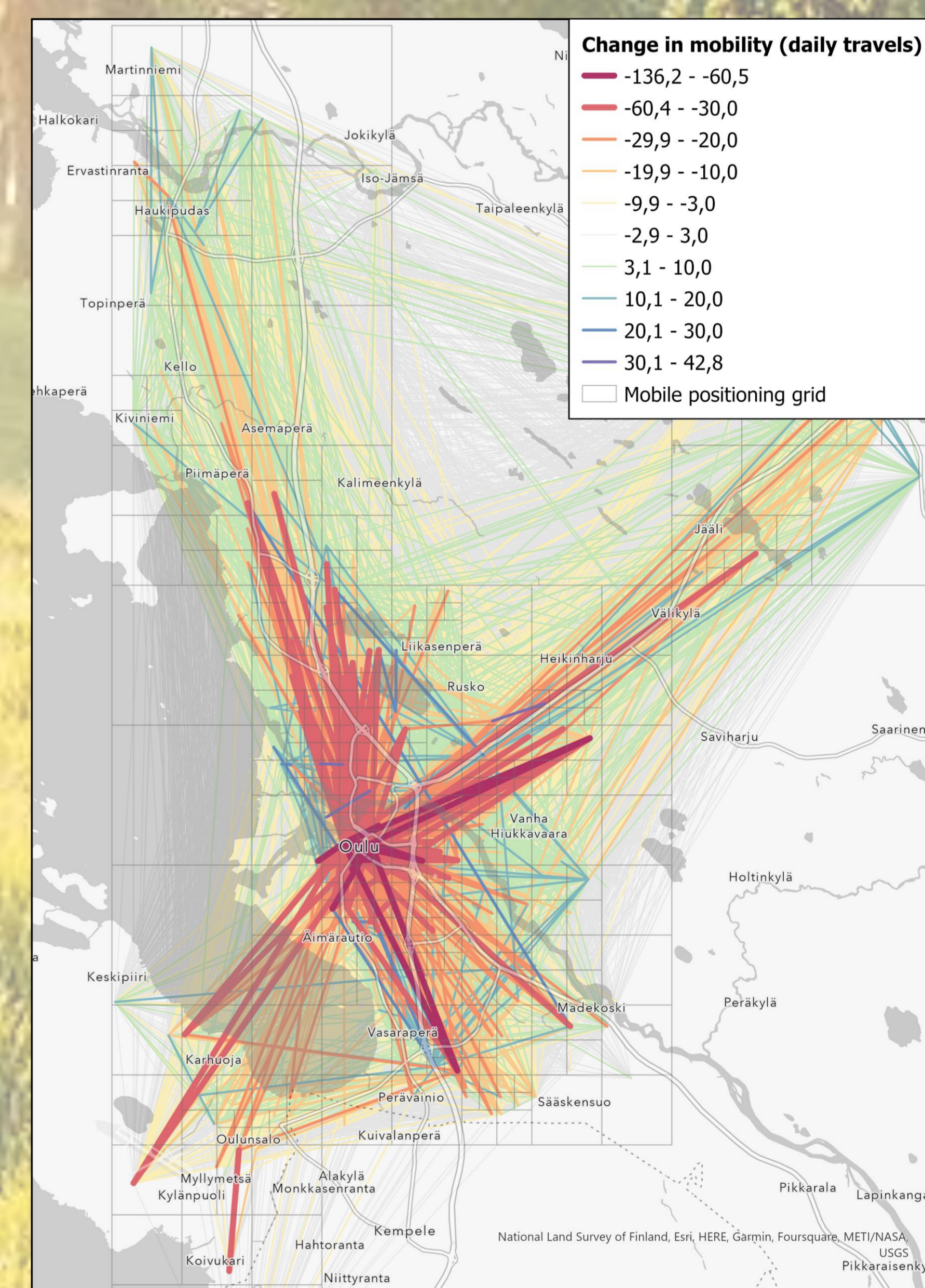


Fig 4. Change in total mobility in city of Oulu between May 2019 and May 2021 (weekday average of all transport modes) (Map by Ossi Kotavaara)

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