

Metadata on dataset 2 - Data on public perceptions of, attitudes towards, and values for managing urban green infrastructure for carbon, biodiversity, and well-being outcomes in Helsinki, Finland

Data collection event: “*Carbon-smart green spaces in Helsinki: A survey on residential perceptions of the carbon sequestration and storage of green spaces in Helsinki*” -survey.

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Suggested citation: Lampinen J, García-Antúnez O, Olafsson AS, Kavanagh KC, Gulsrud NM, Raymond CM (2022) Data from “*Carbon-smart green spaces in Helsinki*” -survey. The CO-CARBON -project.

Target population: Adult (> 18 years old) residents of the city of Helsinki.

Data collection method: Public participatory GIS -survey.

Approach to sampling: Mixed-mode approach, including random sample of 1 000 residents contacted with letters of invitation and outreach through online newspaper and social media. The address data relevant to sending letters of invitation to the target population was acquired from Digital and population data services agency (DVV, decision DVV/5158/2021-2), and destroyed when the data collection came to an end.

Data collection time: 13.9.-1.11.2021

Data variables published as open access:

- **Datasheet:** Dataset_2_Aspatial_survey / survey questions without a spatial reference
 - **Respondent_ID** / pseudonym linking the responses to each question by the same respondent together
 - **Publication_ID** / code linking all responses originating within a given version of the survey instrument together
 - **Submitted_time, First_active_time** / dates and times at which response took place
 - **Carbon Literacy_Understandings of CSS** / qualitative description of how each respondent understood carbon sequestration and storage in the context of urban green infrastructure.
 - **TO_BD_1, TO_BD_2, TO_BD_3** / attitudinal statements regarding managing, designing and planning urban green infrastructure for carbon sequestration and storage with trade-offs to biodiversity conservation.
 - **TO_AES_1, TO_AES_2, TO_AES_3** / attitudinal statements regarding managing, designing and planning urban green infrastructure for carbon sequestration and storage with trade-offs to green space aesthetics.
 - **TO_REC_1, TO_REC_2, TO_REC_3** / attitudinal statements regarding managing, designing and planning urban green infrastructure for carbon sequestration and storage with trade-offs to outdoor recreation possibilities in green spaces.
 - **PolAtt_X_In Helsinki** / attitudinal statements assessing the social acceptability of specific carbon-oriented urban green infrastructure policies.

These statements assess global acceptability in all green infrastructure at the city scale.

- **PolAtt_X_In my local green spaces** / attitudinal statements assessing the social acceptability of specific carbon-oriented urban green infrastructure policies. These statements assess local acceptability at the scale of specific, local green infrastructure to the participant.
- **Access_X** / self-reported frequency in which the participant had access to specific green and blue urban green infrastructure types.
- **Survey_distribution_channel** / information on how the participant got to know about the survey.

- **Datasheet: Dataset_2_Spatial_important** / survey questions linked to coordinates
 - **Respondent ID** / pseudonym linking the responses to each question by the same respondent together
 - **Index** / number of mapped points by each ID
 - **wkt** / WGS84 longitude and latitude of mapped points describing green spaces in Helsinki personally important to the respondent
 - **SV_type** / selection of social values linked to each mapped important point. A multiple choice list of social values popped up after mapping the point. The list of social values derived from the coding of open-ended answers for mapped important green spaces of a pilot survey.

- **Datasheet: Dataset_2_Spatial_unpleasant** / survey questions linked to coordinates
 - **Respondent ID** / pseudonym linking the responses to each question by the same respondent together
 - **Index** / number of mapped points by each ID
 - **wkt** / WGS84 longitude and latitude of mapped points describing green spaces in Helsinki perceived as unpleasant by the respondent
 - **Reasons_unpleasant** / qualitative description of why participants perceived the mapped green space as unpleasant.

- **Datasheet: Dataset_2_Spatial_biodiversity** / survey questions linked to coordinates
 - **Respondent ID** / pseudonym linking the responses to each question by the same respondent together
 - **Index** / number of mapped points by each ID
 - **wkt** / WGS84 longitude and latitude of mapped points describing green spaces in Helsinki perceived as high in biodiversity by the respondent
 - **Reasons_Biodiversity** / qualitative description of why participants perceived the mapped green space as high in biodiversity.

- **Datasheet: Dataset_2_Spatial_carbon** / survey questions linked to coordinates
 - **Respondent ID** / pseudonym linking the responses to each question by the same respondent together
 - **Index** / number of mapped points by each ID
 - **wkt** / WGS84 longitude and latitude of mapped points describing green spaces in Helsinki perceived as high in carbon sequestration and storage by the respondent
 - **Reasons_Carbon** / qualitative description of why participants perceived the mapped green space as high in carbon sequestration and storage.

Data variables published as metadata descriptives only:

- **Socio-demographic context of each respondent** / continuous numeric variables describing respondent age and income, and discrete numeric variables describing sex, education and employment with ordered or unordered categories.

- **Respondent domicile** / coordinates in WGS84 of participants' domiciles.

Reason for not publishing all survey data as open access: Certain variables in the data are personal data: respondent domicile is a direct identifier and socio-demographic variables indirect identifiers. Certain respondents are underaged: despite targeting the survey to adult residents, some underaged respondents took the survey. The data produced by these respondents has been deleted.

Duration of storage of the variables only published as metadata: Six years.

Location of storage of variables only published as metadata: University of Helsinki hard drives.

Publications produced from the data, with more information on the data:

Lampinen J, García-Antúnez O, Lechner AM, Olafsson AS, Kavanagh KC, Gulsrud NM, Raymond CM (2023) Mapping public support for urban green infrastructure policies across the Biodiversity-Climate-Society -nexus. *Work in progress*.

Raymond CM, Lechner A, Havu M, Jalkanen J, Lampinen J, García-Antúnez O, Olafsson A, Gulsrud N, Kinnunen A, Backman L, Kulmala L, Järvi L (2023) Spatially identifying where nature-based solutions can offer win-wins for carbon mitigation and biodiversity based on diverse values and knowledge systems. *Work in progress*.

García-Antúnez O, Lampinen J, Gulsrud NM, Raymond CM, Stahl Olafsson A (2023) Exploring the relationship between public understandings of carbon sequestration and storage and support for carbon-neutral urban greenery. *Work in progress*.