



NATURE Tool Case Study Report for

Malmi District, Helsinki, Finland

Project Type	Development Options Appraisal	Assessment Scope	Change
Project Location	Helsinki, Finland	Assessment Type	Basic
Assessment By	WSP	Assessment Status	Projection
Date	July 2021	Tool Version	1.0 BETA

The Malmi District is a suburb of the Finnish capital city Helsinki. Many developments in Malmi require redevelopment and retrofitting to meet the demands of projected population growth, as well as creating resilient and liveable places for its residents. WSP Finland were commissioned to conduct an options appraisal for potential urban greening scenarios for the district, working alongside the planned new and existing developments. These ranged from a business-as-usual approach to an ambitious and functional vision for the district’s natural capital to adapt to climate change.

As part of this work, the Finnish WSP team applied a green area factor tool and WSP UK undertook NATURE Tool assessments on two of the scenarios, thereby allowing a quantification of natural capital benefits beyond those of the green area factor tool. Additionally, this allowed two scenarios to be compared in terms of natural capital and ecosystem services impact. The results showed dramatic differences between the business as usual scenario and the ambitious urban greening scenario, with the former likely to reduce benefits from nature instead of achieving gains. Importantly, changes such as adding green roofs were shown to achieve large benefits for regulating services.

The NATURE Tool is a user-friendly tool to assess the impact of land-use and management changes on natural capital performance at the project scale – because what gets measured gets managed

NATURE Tool Development Led By



Ecosystems
Knowledge
Network

In Collaboration With



**Northumbria
University**
NEWCASTLE

Co-funded by

Innovate UK

Co-Developed Together with a Broad Partnership of Organisations Involved in the Build Environment

For more information, downloads & case studies visit

[NATURE-Tool.com](https://www.nature-tool.com)

Case Study Introduction

The district of Malmi is located to the north of the Finnish capital city of Helsinki. The district mainly consists of mixed-density housing, shops, employment spaces, a transport hub and multiple greenspaces. As part of plan to redevelop and retrofit the district for the future, an options appraisals was conducted to explore various urban greening scenarios.

Reason for Using the NATURE Tool

The NATURE Tool assessments for Malmi were part of the international testing phase of the tool development, providing an opportunity to both establish the international transferability of the tool, as well as providing added benefits to the Malmi options appraisal project. Additionally it showed how the tool differed from their [Green Area Factor tool](#) assessments.

The NATURE tool was used to explore changes in natural capital and its benefits for two scenarios (1A) a business as usual scenario, and (2B) and ambitious functional urban greening scenario, including green roofs and natural stormwater management. This allowed for the biggest potential contrast in benefits from nature to be illustrated in the district.

Due to using the NATURE Tool outside its intended geographical region (United Kingdom) a basic assessment was undertaken. This eliminated the need to acquire comparable datasets for an advanced assessment. All 17 ecosystem services were however assessed.

Due to the application of the tool to the Finnish context there were a number of additional challenges in undertaking the assessment. Firstly, the most important dataset is a land-use land-cover map showing the spatial extent of the sites baseline habitats and future changes. Attributes had to be translated from Finnish to English, and then best matched to the UK habitats

classifications used in the tool. The later was challenging due to the different way habitats are mapped in Finland. For example trees are classed into sizes i.e. 15-20m, >20m etc, these had to be grouped into a broader broadleaved & mixed woodlands for example. Future habitats were easier to classify with the help of the Finnish team, for example there could confirm for the 2B green roofs were extensive. Additionally visualisation and images from the sites help convert the habitat classifications.

Findings & Outcomes

The results clearly showed that a business as usual scenario doesn't deliver gains in benefits from nature and in fact shows losses. This is in contrast with the gains shown by the NATURE tool from scenario , where there were overall gains shown across all benefit categories. Here regulating and supporting functions increased by 40% as a result of the extensive green roofs and Sustainable Drainage Systems (SuDS) features.

Experience & Feedback

The tool worked well even with the additional challenges. Cultural values may differ internationally especially as many coniferous species are native in Finland. Therefore some benefits may be underestimated. Overall our partners were impressed by the visualisation of results and clear messages.

Acknowledgements

The assessment was carried out in collaboration with WSP Finland.

About the NATURE Tool

The NATURE Tool was first released in July 2021. For more information and for downloading the tool visit [NATURE-Tool.com](https://www.nature-tool.com). For enquiries please [contact the tool developers](#).

Ecosystem Services & Benefits	Change Score	Potential Score	Completeness Score	Policy Priority	All Objectives Met?	Achievements
People Score	-5%	15%	6	N/A		
Cultural & Health	-7%	16%	6	N/A		
Mental health	-7%	15%	6	M	N/A	
Physical Health	-5%	15%	6	M	N/A	
Aesthetic Values	-12%	17%	7	M	N/A	
Education & Knowledge	-9%	15%	6	M	N/A	
Interaction with Nature	-14%	16%	6	M	N/A	
Recreation	-5%	18%	7	M	N/A	
Sense of Place	+3%	19%	7	M	N/A	G
Regulating & Supporting	-3%	18%	7	N/A		
Air Quality Regulation	-1%	13%	3	M	N/A	
Carbon Storage	-7%	23%	5	M	N/A	
Cooling & Shading	+0%	22%	5	M	N/A	
Erosion Protection	-6%	15%	8	M	N/A	
Flood Regulation	+5%	19%	8	M	N/A	G
Water Quality Regulation	-3%	16%	8	M	N/A	
Pest Control	-4%	16%	8	M	N/A	
Pollination	-7%	17%	9	M	N/A	
Provisioning	-4%	5%	4	N/A		
Food & Fish - Commercial	+0%	0%	6	L	N/A	
Food & Fish - Community	-17%	0%	4	M	N/A	
Water Availability	+1%	11%	5	M	N/A	
Wood Production	-17%	7%	0	L	N/A	

PEOPLE

NATURE TOOL

Version 1.0 BETA

Malmi District Finland

SUMMARY RESULTS FOR BASIC CHANGE ASSESSMENT - PROJECTION

Malmi Helsinki

Scenario 2B (Functional Urban Green)

Policy Priorities Defined By International Testing | Assessment By International Testing

Ecosystem Services & Benefits	Change Score	Potential Score	Completeness Score	Policy Priority	All Objectives Met?	Achievements
People Score	+35%	21%	7	N/A	G	
Cultural & Health	+31%	23%	7	N/A	G	
Mental health	+28%	20%	6	M	N/A	
Physical Health	+28%	20%	6	M	N/A	
Aesthetic Values	+33%	26%	7	M	N/A	G
Education & Knowledge	+22%	20%	6	M	N/A	
Interaction with Nature	+22%	22%	6	M	N/A	
Recreation	+24%	24%	7	M	N/A	G
Sense of Place	+52%	27%	7	M	N/A	G
Regulating & Supporting	+40%	25%	7	N/A	G	
Air Quality Regulation	+15%	15%	3	M	N/A	
Carbon Storage	+10%	27%	6	M	N/A	
Cooling & Shading	+56%	34%	6	M	N/A	
Erosion Protection	+9%	18%	8	M	N/A	G
Flood Regulation	+21%	22%	8	M	N/A	🏆
Water Quality Regulation	+14%	19%	8	M	N/A	G
Pest Control	+95%	33%	8	M	N/A	🏆
Pollination	+87%	35%	9	M	N/A	🏆
Provisioning	+20%	7%	4	N/A		
Food & Fish - Commercial	+0%	0%	6	L	N/A	
Food & Fish - Community	-7%	0%	4	M	N/A	
Water Availability	+34%	15%	5	M	N/A	
Wood Production	-14%	7%	0	L	N/A	

PEOPLE