State of the Map 2022

Modeling accessibility to public green in large urban centers using OSM data

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GO GREEN ROUTES

UNIVERSITA DEGLI STUDI DI TORINO


1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
THE GLOBAL GOALS
For Sustainable Development
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

"shared blueprint for peace and prosperity for people and the planet, now and into the future"

11 SUSTAINABLE CITIES AND COMMUNITIES

Target 11.7:

“By 2030, provide universal access to safe, inclusive and accessible, **green and public spaces**, in particular for women and children, older persons and persons with disabilities”.

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Customizable selection of green areas

Identification of accessible and public areas through key:value pairs and\or the street network

World-wide coverage

Key	value
leisure	park
leisure	garden
landuse	forest
landuse	grass
landuse	meadow
landuse	recreation_ground
natural	wood
natural	grassland
natural	meadow

- OSRM [Open Source Routing Machine] - to compute walking distances between residential locations and green areas
- Key: ‘access’ to identify accessible urban green areas

- OSM extracts for large urban centers following the GHS Urban Centers Database definitions
- Largest 50 cities (with more than 100.000 inhabitants) for each country (~ 2500 urban centers)
- Population data from the Global Human Settlement - population layer, 9 arcsec resolution

RQ1: How does OSM data on green land-use compare to Copernicus Urban Atlas?

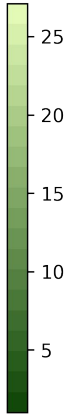
RQ2: Can we build a framework to consistently measure accessibility to public green areas at a high-resolution?

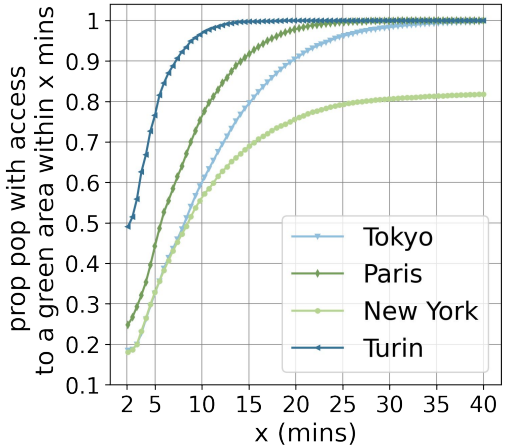
RQ3: Can we use the framework to model the impact of different policy scenarios?

Our interactive tool

Set parameters:

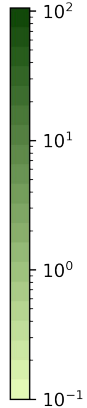
type of green= [‘parks’, ‘forests’, ‘grass’,’meadows’]
public green minimum size= 3 ha
type of index= **Minimum Distance (in min)**

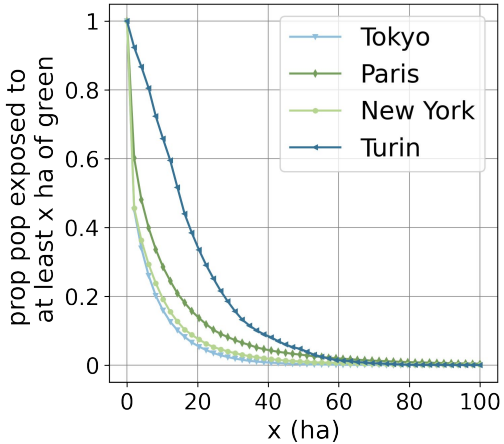




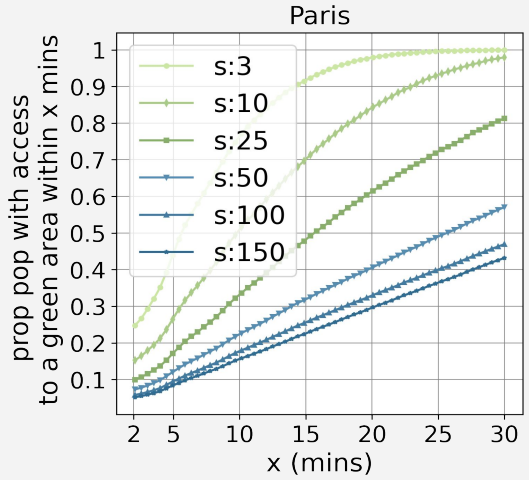
Set parameters:

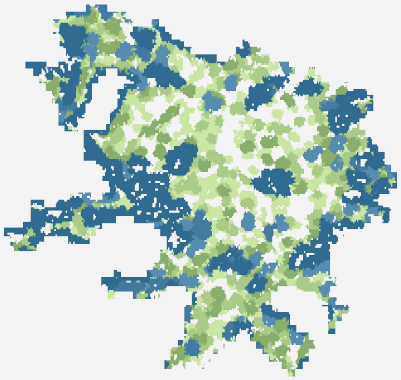
type of green= [‘parks’, ‘forests’, ‘grass’,’meadows’]
public green minimum size= 3 ha
type of index= **Total Exposure within 10 mins (in ha)**



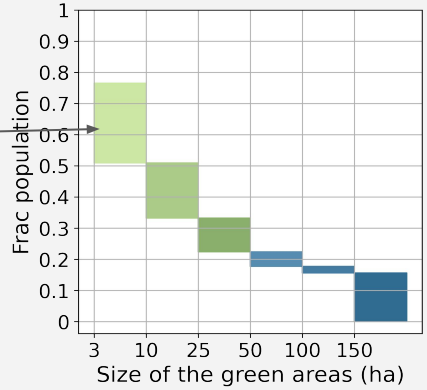


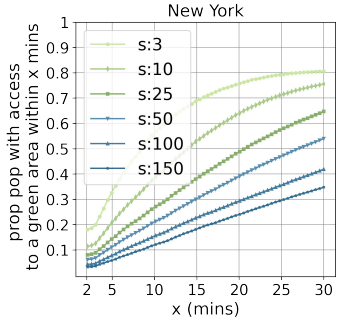
Unveiling the importance of small green areas

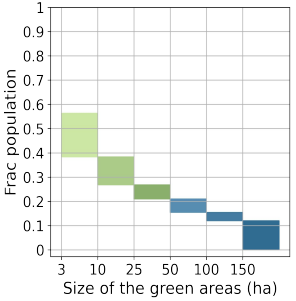


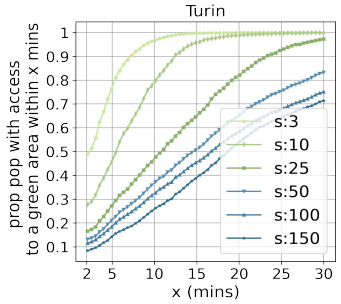


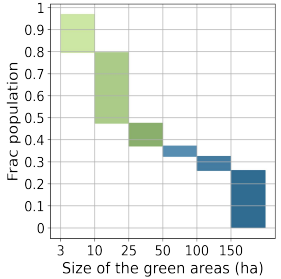
Approximately 30% of the population satisfying the target has access to a green area between 3 and 10 ha







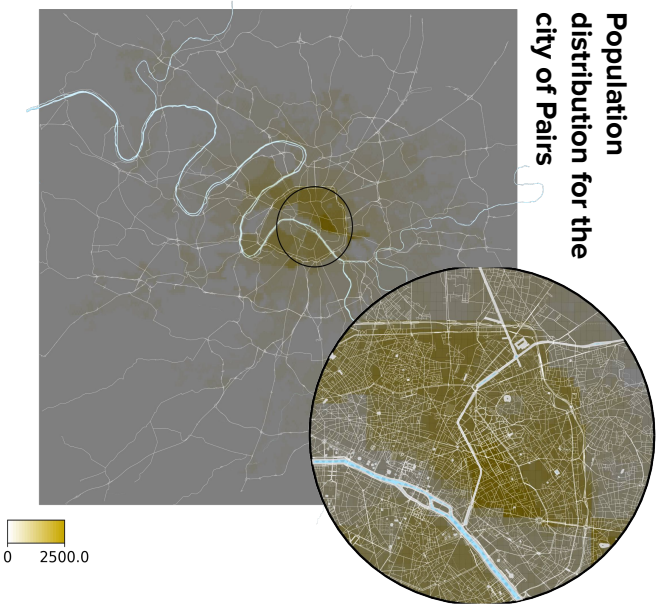


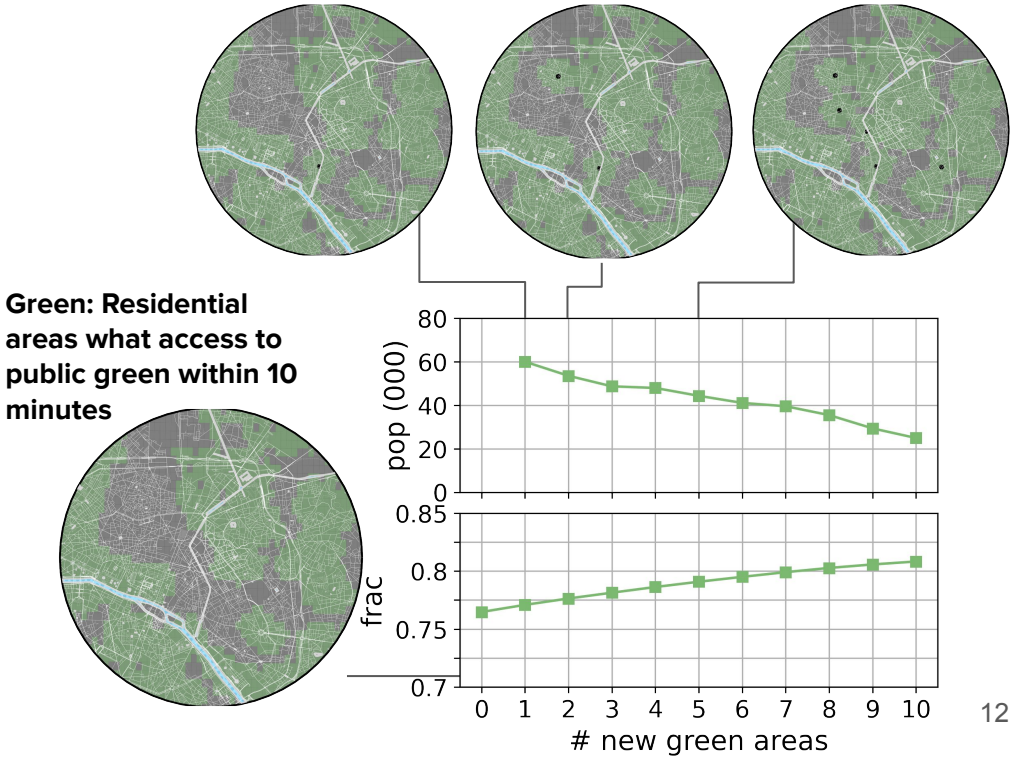


Designing policy scenarios

Selected scenario: Adding 10 optimally located public green areas in Paris

Objective:
Maximize share of population with access to a public green area of at least 3ha (4 soccer courts) within 10 mins from the residential area





Thank you!

All updates on the project will be published here:

https://github.com/alibatti/AccessToGreenOSM

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https://alibatti.github.io/