

URBALYTICS

Remote Sensing tools for Urban Heat Island Assessment and Climate Change Adaptation through Nature-Based Solutions

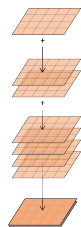
Urbalytics, funded by AI4Copernicus, aims to evaluate the impacts of the Urban Heat Island (UHI) effect on the urban environment, bridging Artificial Intelligence with Earth Observations, producing information layers that can support city planners and decision-makers in the context of climate resilience and related challenges in urban areas.

Results: Automated workflow that combines Land Cover and Land Surface Temperature models at 10m spatial resolution and derives Surface UHI from Copernicus Sentinel-2 images, assessing Ecosystem Services provided by Urban Green Infrastructures and proposing a set of Nature-Based Solutions.

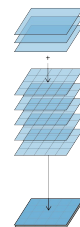
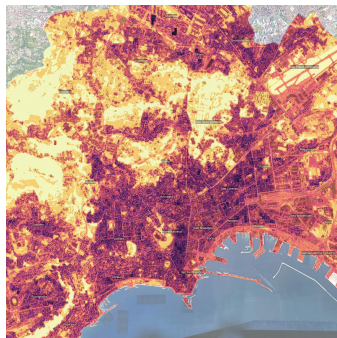
Services:

- 1 - Heatwave Potential Risk (HPR) Index
- 2 - Microclimatic Performance Index (MPI) of Urban Vegetation
- 3 - Park Cool Islands (PCI) assessment
- 4 - UHI Adaptation scenarios through NBS implementation

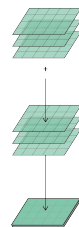
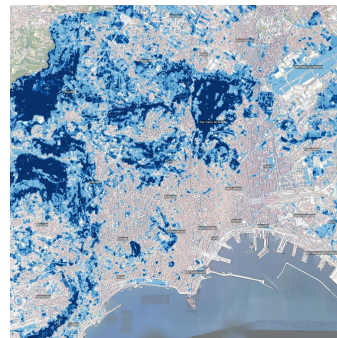
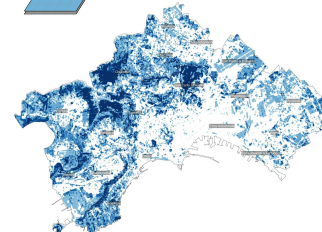
Application: Naples and Milan (Italy) as pilot cases, outcomes 1, 2 and 3 are fully automated and replicable on other urban areas.



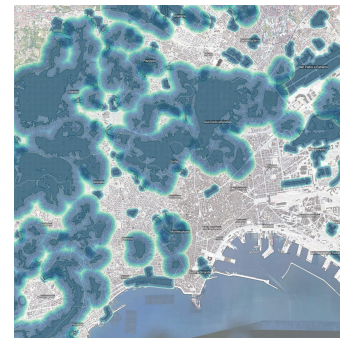
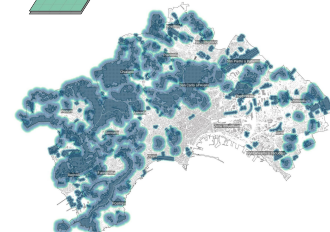
SERVICE 01
**Heatwave
Potential Risk
(HPR) Index**



SERVICE 02
**Microclimatic
Performance Index
(MPI) of Urban
Vegetation**



SERVICE 03
**Park Cool
Islands (PCI)
assessment**



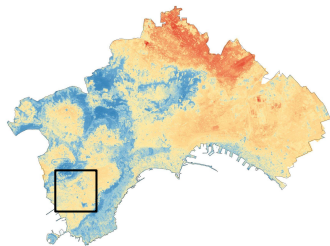
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SERVICE 04

UHI Adaptation scenarios through NBS implementation

Milan case study
Ex-NATO area



01 / Data collection and scenario setting

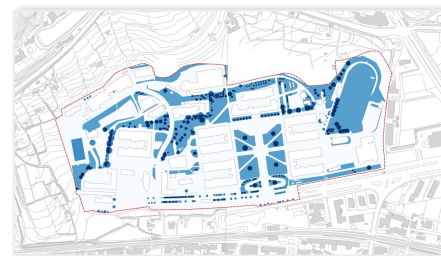


current situation



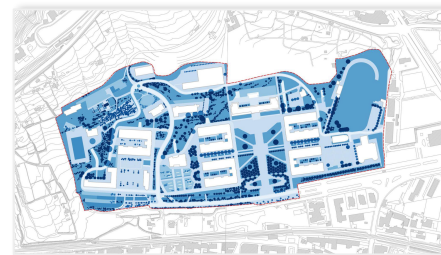
project scenario

02 / Application of the MPI index to test different adaptation scenarios



current situation

MPI score:
13,32 / 100



project scenario

MPI score:
26,43 / 100

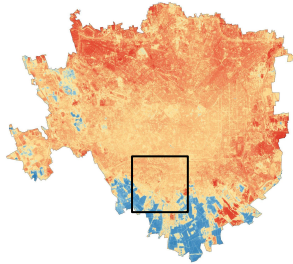
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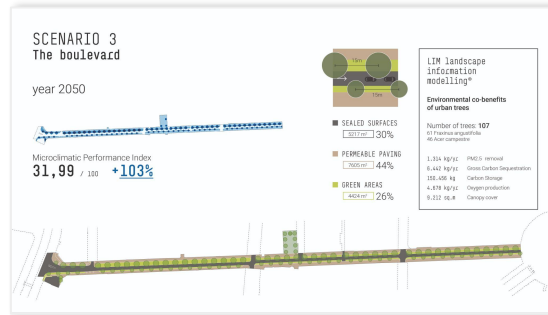
SERVICE 04

UHI Adaptation scenarios through NBS implementation

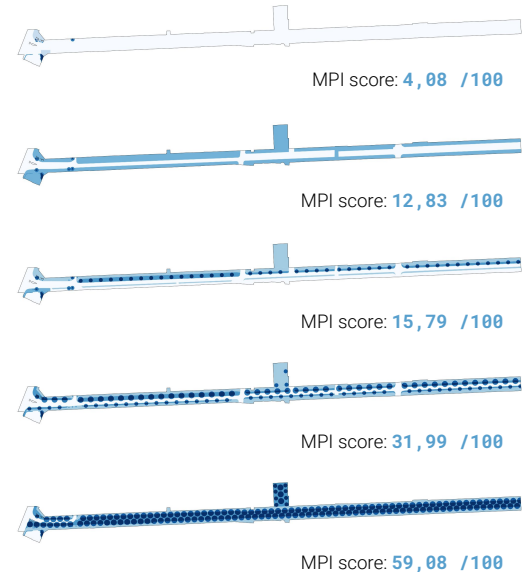
Milan case study
Via Neera



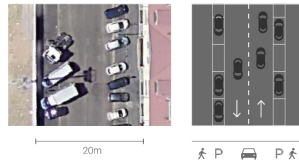
01 / Data collection and scenario setting



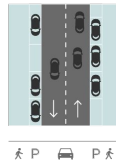
02 / Application of the MPI index to test different adaptation scenarios



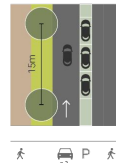
Scenario 0 - current situation



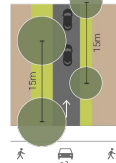
Scenario 1



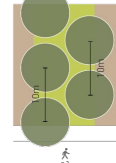
Scenario 2



Scenario 3



Scenario 4



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A14
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