Urban Nature in Salzburg

Red Group (4)

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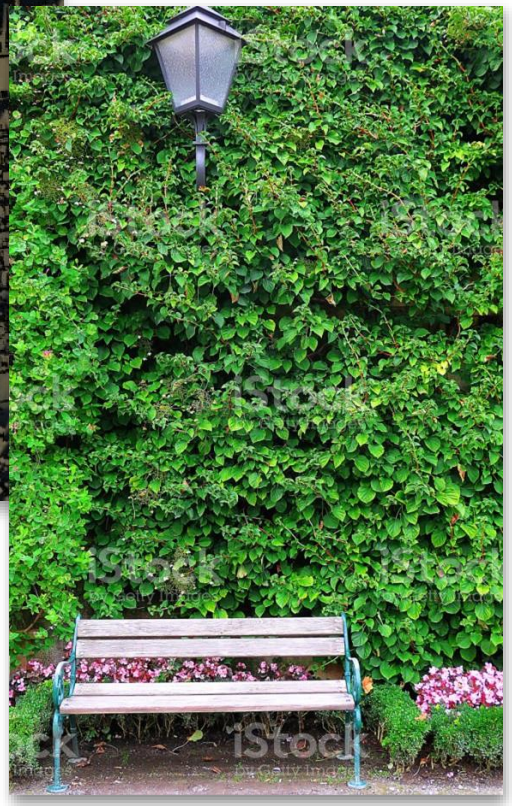
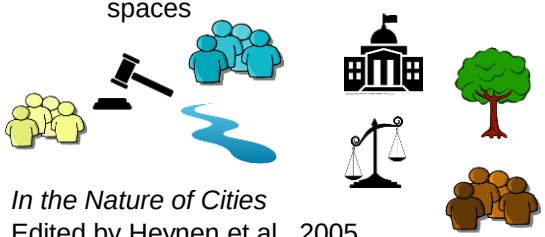
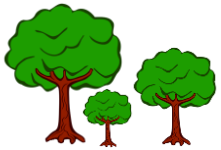
Area: Schallmoos

Outline

- Introduction
- Study Area
- Methodology
  - GIS / Remote Sensing
  - Network Analysis
- Results
- Discussion
- Conclusion



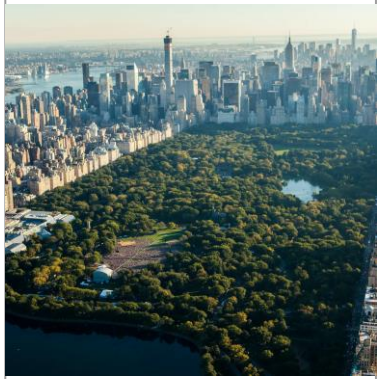
What is urban nature? - Definitional Debates

Urban nature conservation & management	Urban Political Ecology	Use case based proxies
Urban nature as areas which have: • **Semi-natural origins** or appearance • Where **wildlife maintenance** is a management objective • Where ecosystem has complex and **changing communities** • **Interactions** between plants and animals  *Urban Nature Conservation* Kendle & Forbes, 1997	Urban nature as • A **socio-ecological construct** influenced by political, economic, and cultural factors • interconnectedness of nature and cities – **socio-political** processes, **power dynamics**, and **ecological transformations** that occur in urban spaces  *In the Nature of Cities* Edited by Heynen et al., 2005	Urban nature as: • all the **trees** in a city (a proxy) In order to understand the meaning that different ethno-cultural groups assign to urban nature  *How different ethno-cultural groups value urban forests and its implications for managing urban nature in a multicultural landscape* Camilo Ordóñez-Barona, 2017

A working definition for our purpose -

– **species and habitats in urban matrix**, where natural processes are active (water infiltration, ecological succession, nutrients and carbon cycles) (Kowarik, 1999)

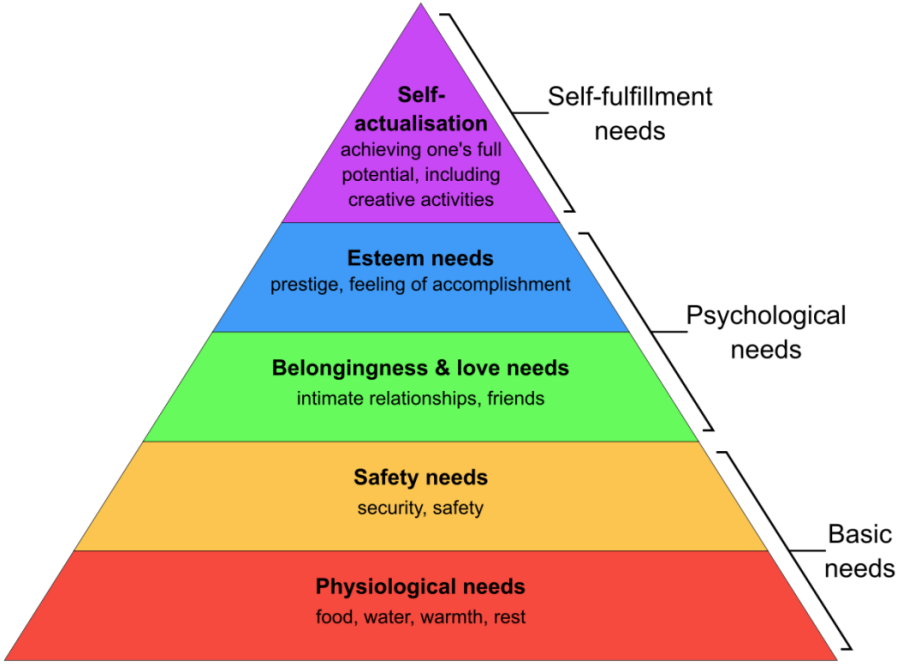
What types of Urban Nature exist?

Pristine Nature	Production Ecosystems	Designed Landscapes	Restored Areas	Nature based solutions
				

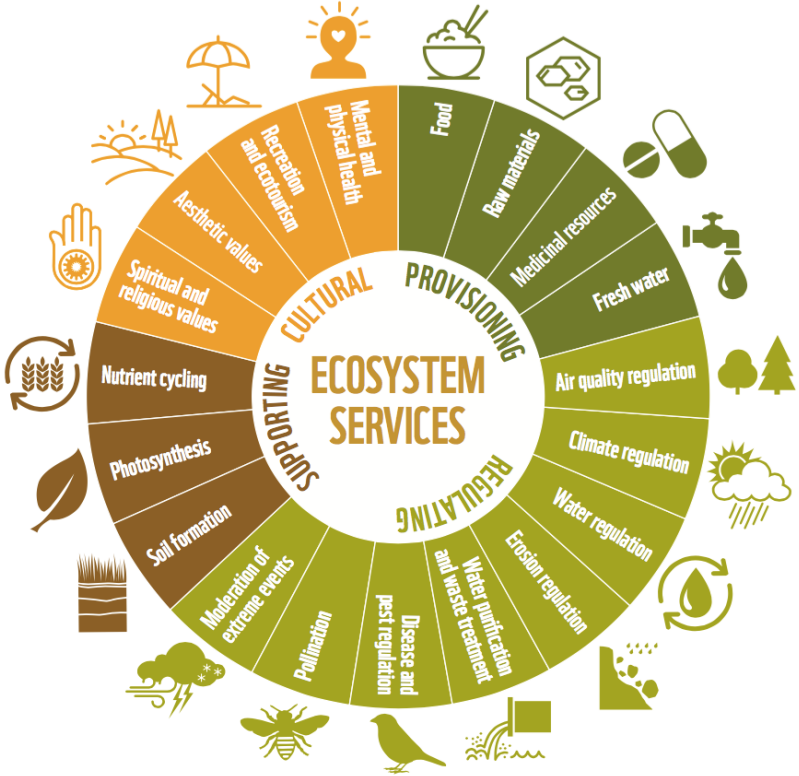
Five urban Nature categories by Kowarik, 1999

Why Urban Green is important?

Human Needs & Ecosystem Services



Maslow, 1970



Sam & Ukotije-Ikwut (2020)

Where are we?

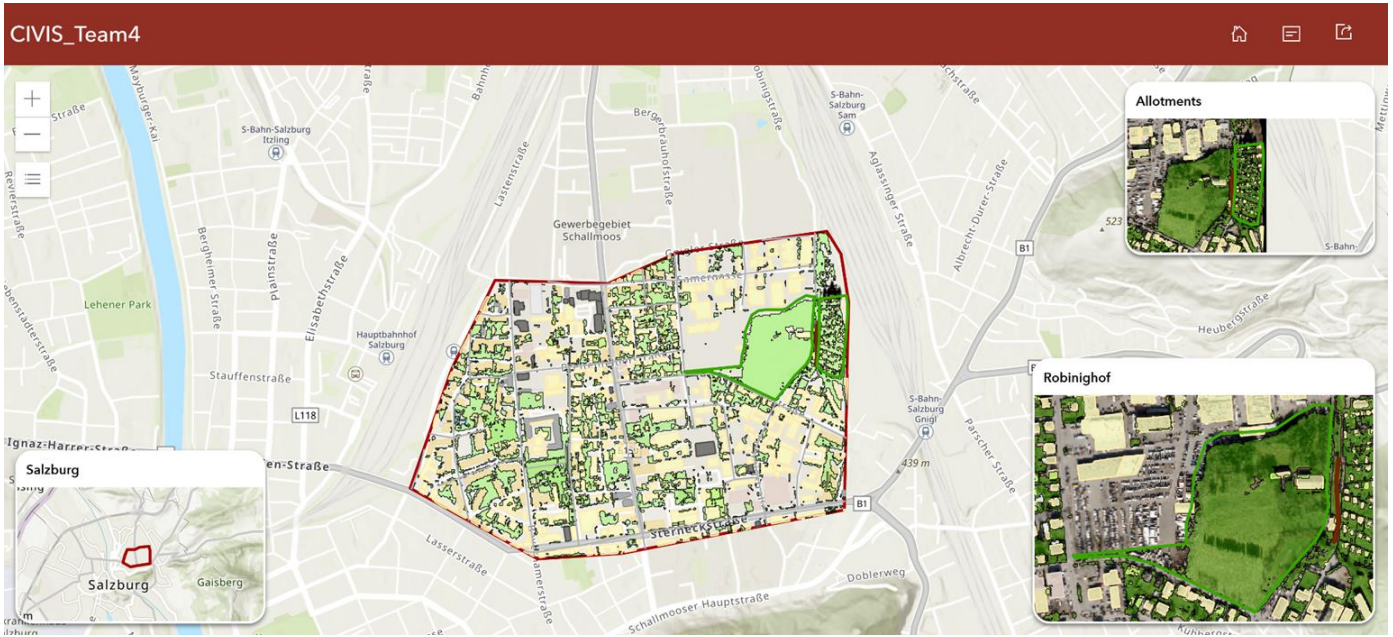
- North of Kapuziner-Hill
- Between the railway → good transportation infrastructure/steel landscape/Pollution
- Trading and commercial companies
- Accommodation units

Methodology (GIS/Remote Sensing)

Workflow

- Collected vector data (roads, boundaries, buildings, points of interest)
- Clipped data to study area and created polygons and points to highlight key areas
- Calculated NDVI to find vegetation using eCognition
- Created interactive web map including pop ups

Results (Map and Webapp)



[Team 4 Web Map]

[Team 4 Map]

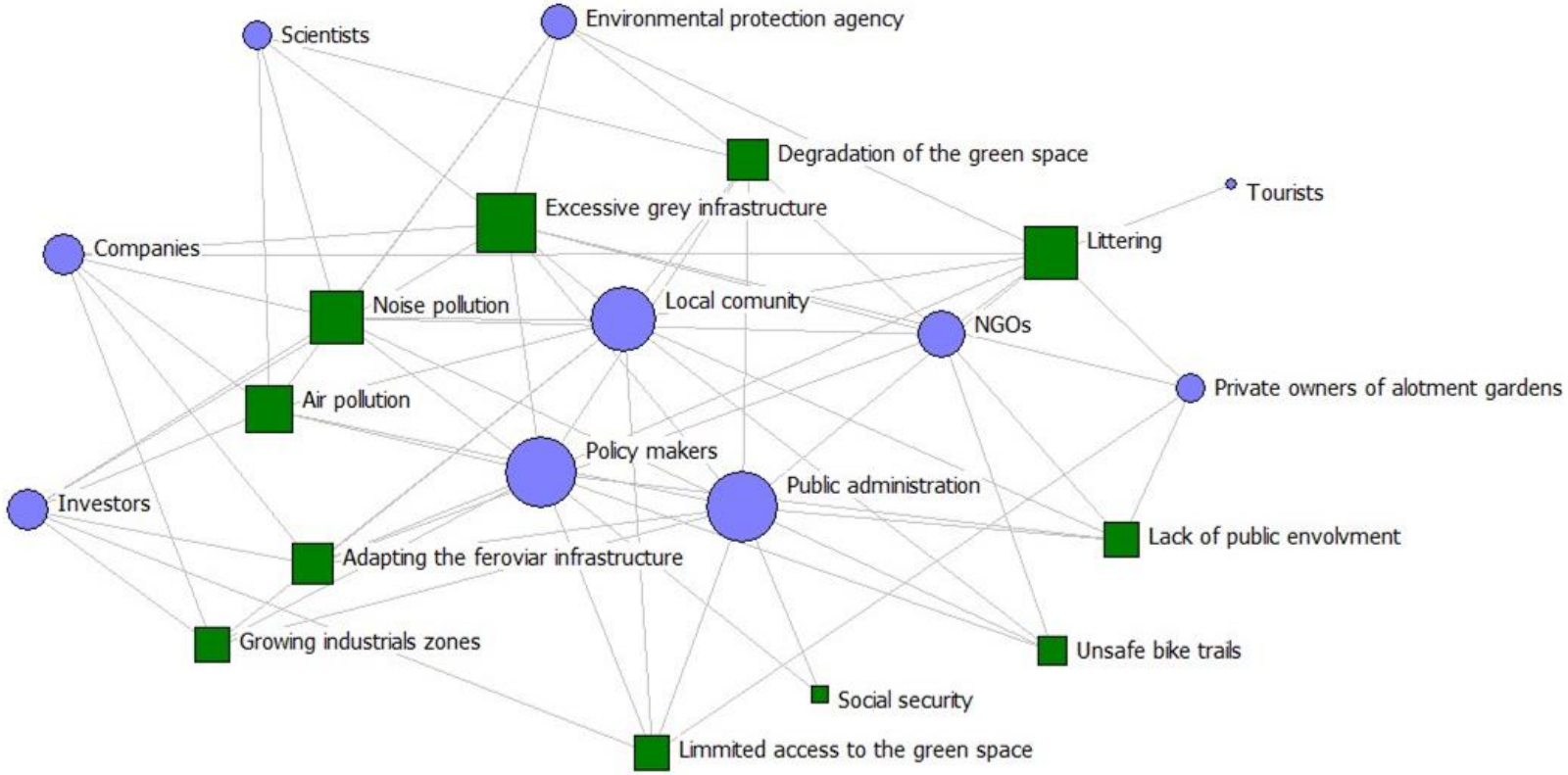
Methodology (Network Analysis)

Workflow

- Identify environmental challenges to optimal urban development planning and implementation
- Identify stakeholders
- Estimate potential impact of stakeholders on the problems identified and possible solutions
- Create network analysis to visualise this

	Environmental challenges										
Stakeholders	Limited access to the green space	Littering	Air pollution	Noise pollution	Degradation of the green space	Growing industrials zones	Excessive grey infrastructure	Lack of public Involvment	Social security	Adapting the feroviar infrastructure	Unsafe bike trails
Local comunity	1	1	1	1	1	1	1	1		1	1
NGOs		1		1	1		1	1		1	1
Public administration	1	1	1	1	1	1	1	1	1	1	1
Companies		1	1	1		1	1			1	
Investors	1		1	1		1	1			1	
Tourists		1									
Scientists			1	1	1		1				
Policy makers	1	1	1	1	1	1	1	1	1	1	1
Environmental protection agency		1	1	1	1		1				
Private owners of alotment gardens	1	1					1	1			

Results (Challenge/Stakeholder Network)



Discussion - Problems

- Private Green Spaces (near Castle)
  - Justice & accessibility
- Pollution
  - Noise
  - Air
- Missing Green Spaces
  - too much concrete

Discussion - Possible Solutions

Greening the city:

- Opening up the private space → planning a park
    - public participation
- Planting trees
    - reducing air pollution
    - noise near streets/railway
- Facade greening

Discussion - Examples of implemented measures

Greening the city

- “A study conducted in Andalusia, Spain found that the widespread implementation of cool roofs would lower carbon dioxide emissions by 135,000 metric tons annually as a result of the reduced energy use, equivalent to removing almost 29,000 passenger vehicles from the road for an entire year.“

- “Thick strips of vegetation in conjunction with landforms or solid barriers can reduce highway noise by 6 to 15 decibels.“

Discussion - Possible Solutions

Whitening the city:

- Whitening the infrastructure → working with the industries

Discussion - Examples of implemented measures

- “Urban albedo enhancements are effective in moderating greenhouse gas emissions and local climate change.”
- “Painting surfaces such as roofs and pavements white or otherwise adding a reflective coating [...] has been demonstrated to reduce the urban heat island effect with reductions in air circulation and evaporative cooling“
- “An experiment conducted in western Athens found that brightening of asphalt and concrete pavements reduced ambient temperature by 6.1 degrees Celsius.“

Conclusion

There exist some potential to improve the area regarding urban green spaces

Important!

Stakeholder must think about justice/accessibility when planning

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THANK YOU

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