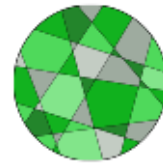


Qualitative Exploration of Perception and Use of Cultural Ecosystem Services from Tree-Based Urban Green Space in the City of Zagreb (Croatia)



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Introduction

Provisioning, regulating, supporting and **cultural ecosystem** services provided from urban green space (UGS) are contributors to human wellbeing.

„Cultural ecosystem services (CES) are nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences”

Millennium Ecosystem Assessment (2005)

City-wide exploratory study provided insights into how people perceive and use tree-based UGS in terms of what CES they perceive and use, as well as what services they connect to different types of tree-based UGS

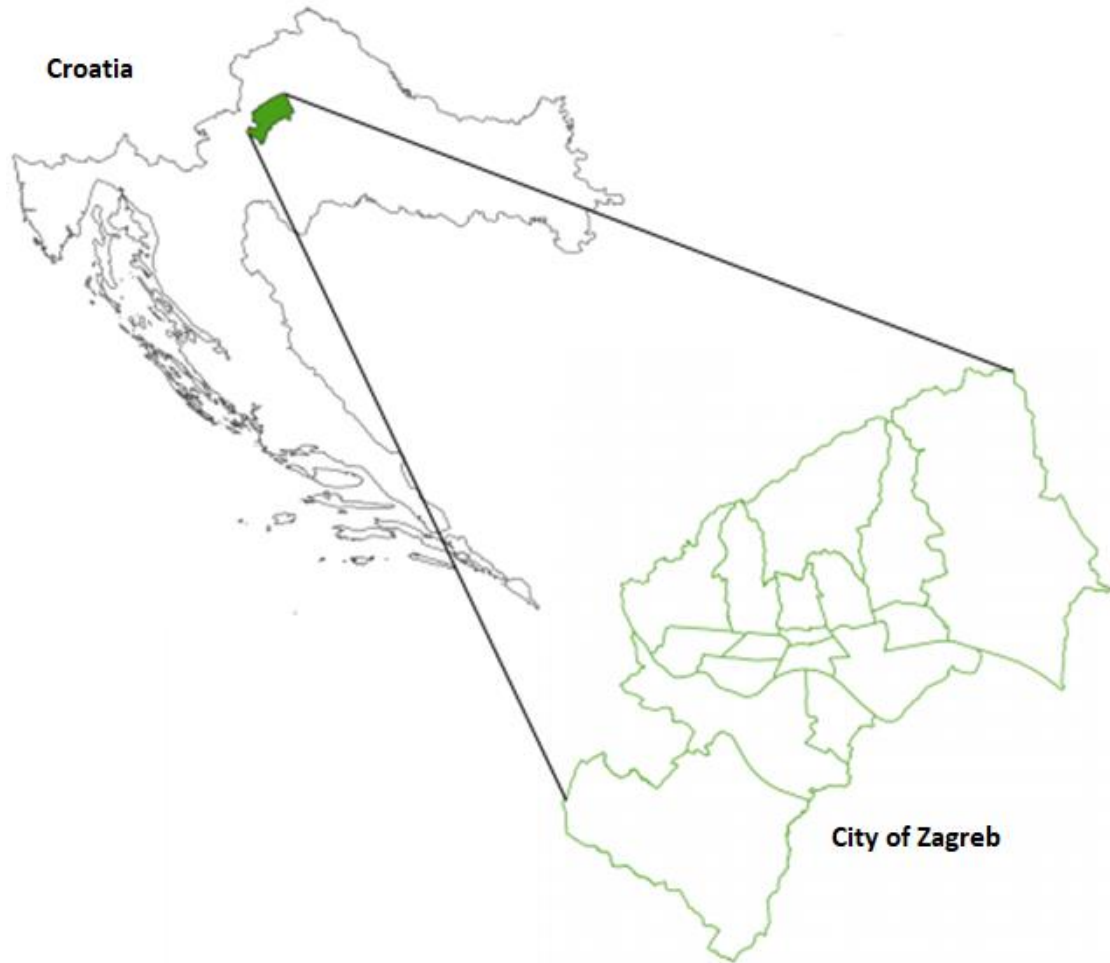
Qualitative studies of CES rarely address them on at the city scale and in different types of UGSs

This study was first of that kind in Croatia and city of Zagreb

UGS use → Social factors + spatially explicit factors

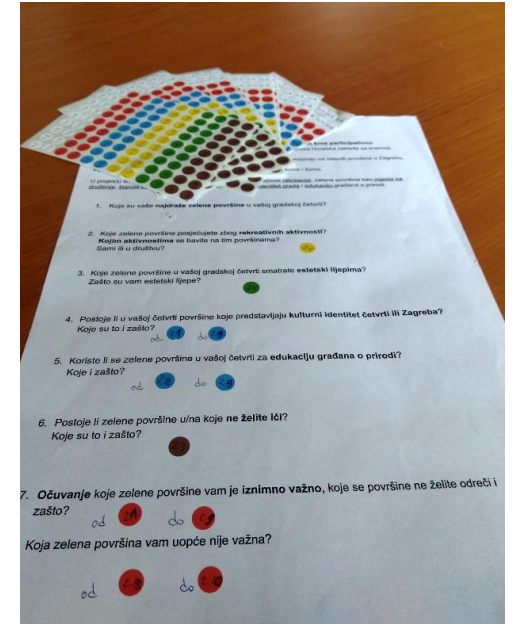
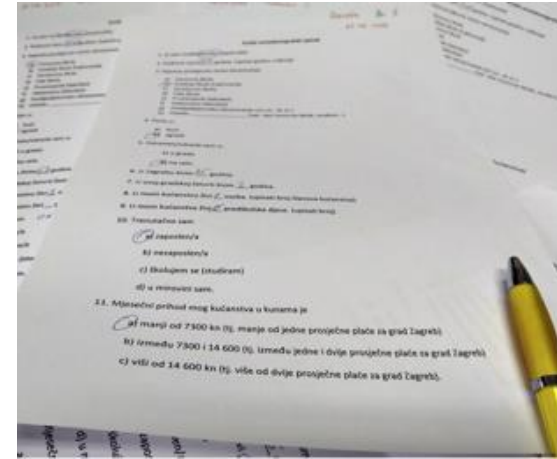


Study area – City of Zagreb



Geographical location	15°59' East longitude 45°49' North latitude	
Surface area	641.32 km ²	
Number of districts	17	
Population in 2018 (estimate)	804 507	
Population by gender (2018, mid-year estimate)	Female	53%
	Male	47%
Population by age	15 – 29	16%
	30 – 44	23%
	45 – 59	20%
	60 ≤	26%
Urban green infrastructure		
	Lenght	Tree-lined roads 243 km
	Number	Public playgrounds 760
		Dog parks 10
	Surface	Parks 59.2 ha
		Grassland 1 085 ha
		Botanical gardens 7.1 ha
		Zoological gardens 7 ha
		Protected natural areas 10 266.1 ha

Method



Focus groups – mixed methods

Qualitative

+

Quantitative

Why?

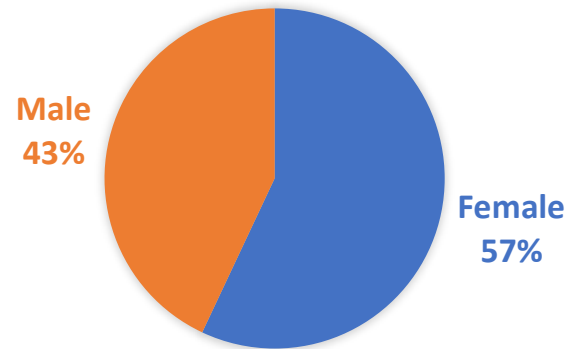
- Group interview
- Established protocol with questions addressing CES
- Recorded and transcribed
- Transcript analysis - CODING

Where?

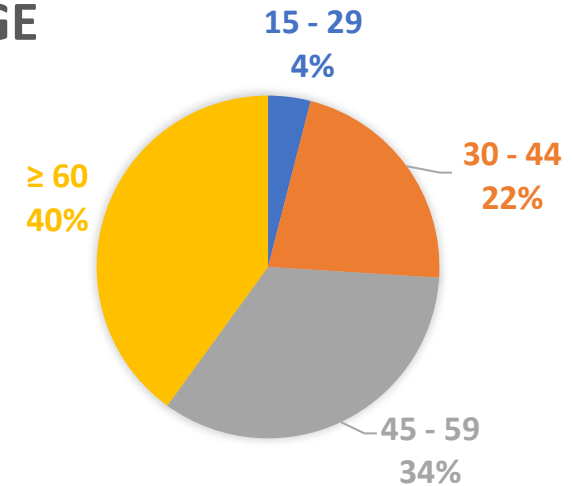
- Workshop participatory mapping
- Socio-economic questionnaire
- Aerial map of city district
- Color and number coding system
- Spatial and statistical analysis

Results → 20 focus groups → 94 participants

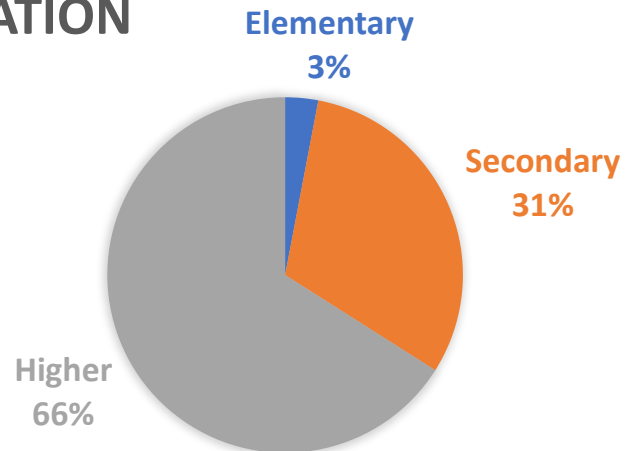
GENDER



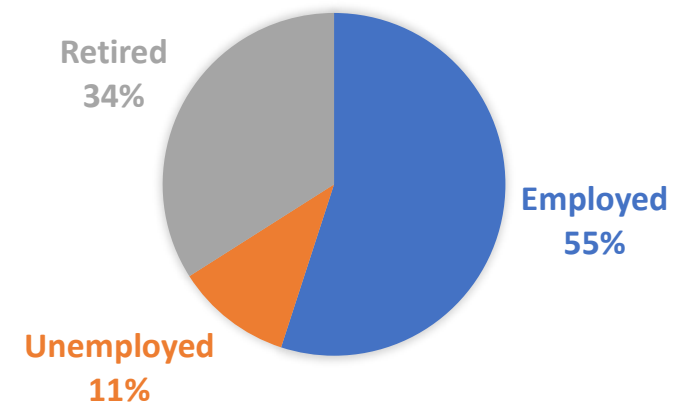
AGE



EDUCATION



WORK STATUS



Results → Place Attachment

Single attributes

- Positive memories
- Good maintenance
- Nice place for walking
- Nearness/proximity
- Presence of facilities and walking paths

UGS type

- Forests
- Parks
- Tree lines
- Park forests
- Walking path along the streams
- Greenery around residential buildings
- Recreational facilities
- Private garden
- Trees
- Window view
- Cemeteries
- Green systems
- Greenway
- Other green spaces



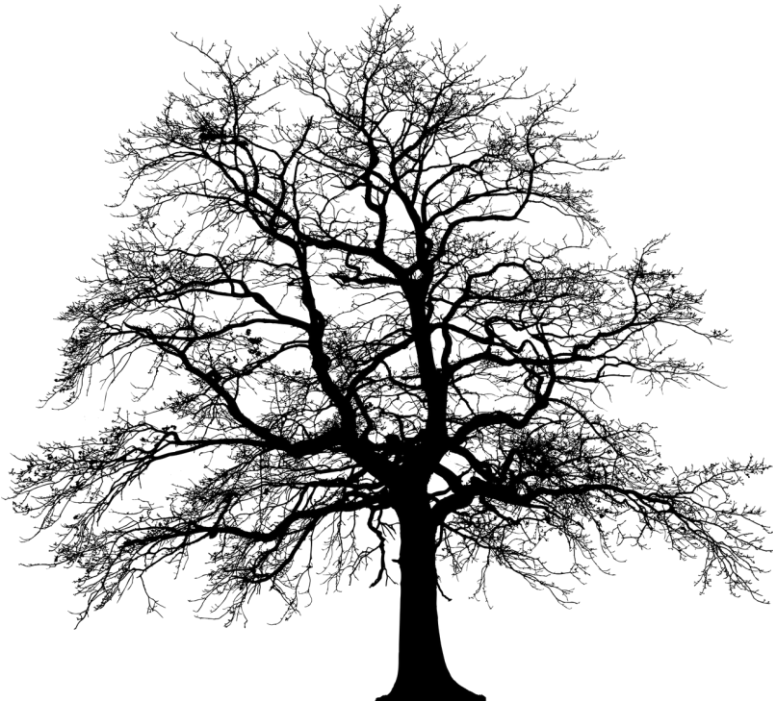
Results → Aesthetics

Single attributes

- Presence of specific tree species
- Presence of trees in general
- Beautiful views
- Presence of colorful leaves
- Presence of water bodies

UGS type

- Tree lines
- Forest
- Parks
- Trees
- Private gardens
- Park-forests
- Greenery around residential buildings
- Walking paths along the streams
- Cemeteries
- Greenery of sports and recreational facilities
- Children playgrounds
- Window views
- greenways



Results → Recreation

Single attributes

- Walking
- Bicycling
- Jogging
- Grilling
- Hunting
- Mountain climbing
- Mushroom picking
- Picknicking
- Skating
- Observing nature

UGS type

- Forests
- Parks
- Tree lines
- Walking paths along streams
- Park-forests
- Children playgrounds
- Greenery of sports and recreational facilities
- Greenery around residential buildings
- Private garden and other UGS
- greenway



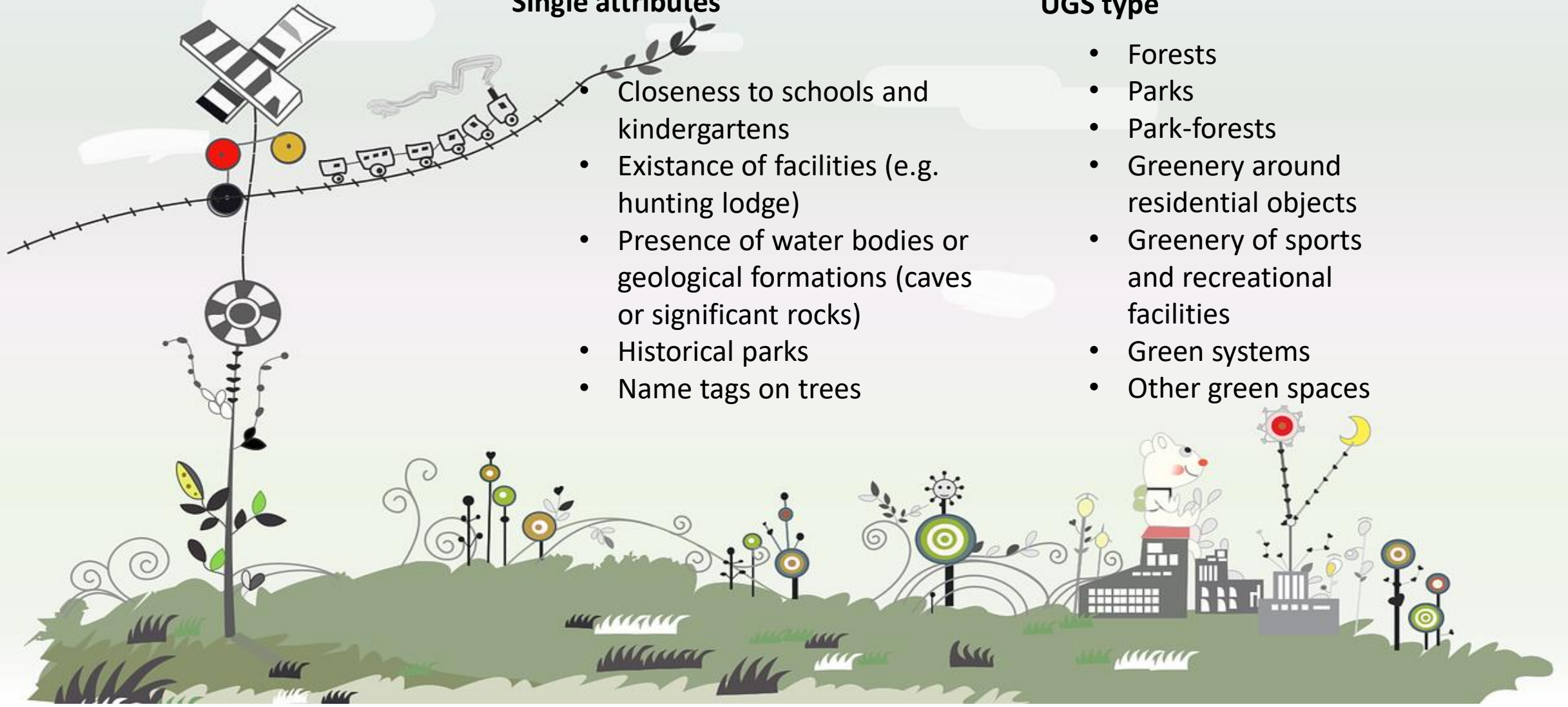
Results → Education

Single attributes

- Closeness to schools and kindergartens
- Existence of facilities (e.g. hunting lodge)
- Presence of water bodies or geological formations (caves or significant rocks)
- Historical parks
- Name tags on trees

UGS type

- Forests
- Parks
- Park-forests
- Greenery around residential objects
- Greenery of sports and recreational facilities
- Green systems
- Other green spaces



Results → Cultural identity

Single attributes

- Popular meeting and/or recreational places
- A symbol of the neighborhood or the city
- Interesting story
- Presence of historical and architectural objects
- Recreational facilities
- Old trees
- Protected natural areas
- Engagement in UGS preservation
- Well-designed

UGS type

- Parks
- Forests
- Park-forests
- Greenery of sports and recreational facilities
- Tree lines
- Walking paths along streams
- Greenery around residential buildings
- Greenways
- Other



Results → CES distribution by various types of tree-based UGSs

CES	Types of Tree-Based Urban Green Spaces														
	F	P	WP	TL	PF	GB	CP	SR	T	PG	WV	C	GS	GW	O
Place attachment	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Aesthetics	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Recreation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Education	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Cultural identity	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

- F – forests
- P – park
- WP – walking paths along the streams
- TL – tree lines
- PF – park forest
- GB – greenery around residential buildings
- CP – children playgrounds
- SR – greenery of sports and recreational facilities
- PG – private garden
- WV – window view
- GS – green system
- GW – greenway
- O - other

Results → examples of CES in Forests and promenade along the stream of city district Sesvete

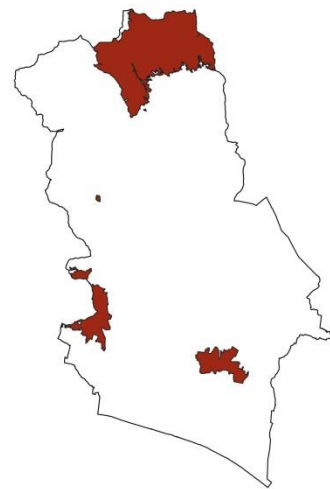
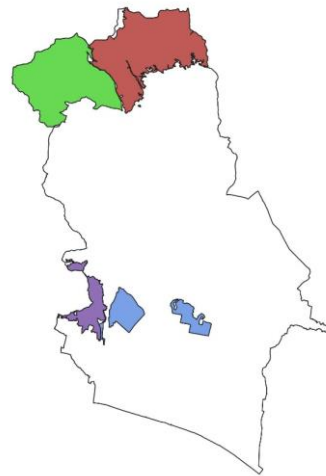
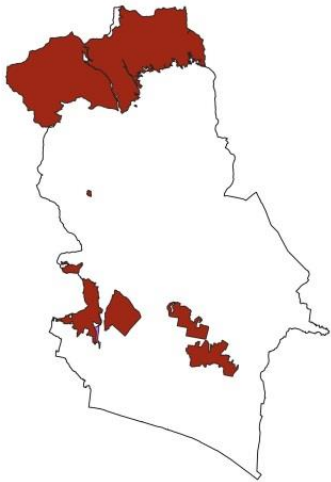
Place Attachment

Recreation

Aesthetics

Education

Cultural identity



- Mountain climbing
- Hunting and mushroom picking
- Sports preparation
- Walking

Conclusion

- Participants perceived all investigated CES, place attachment, aesthetics and recreational services were more pronounced than other CES
- Qualitative and quantitative approaches complement each other
- Public perception provides relevant informations for urban and UGS planners
- Results will be good foundation for PPGIS online questionnaire in next phase of the project



Thank you for your attention

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