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PS 5.4 Changing benefits

Ecosystem service knowledge to design innovative performance-based urban planning approaches

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Integrate ecosystem service knowledge in the new urban plan:

- ✓ at the **strategic** level: identifying ES hotspots to include in the “structural elements” of the plan
- ✓ at the **implementation** level: defining required performances for urban interventions

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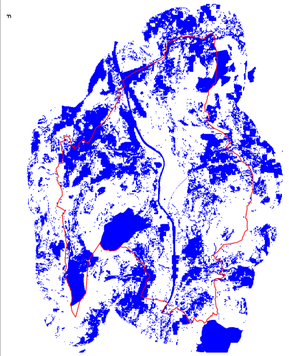
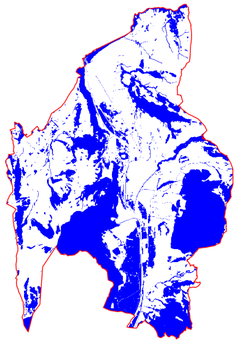
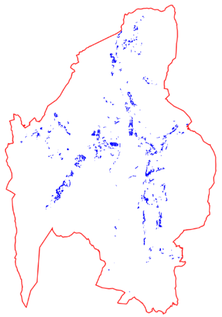
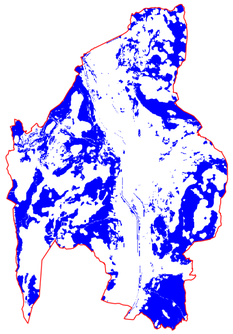
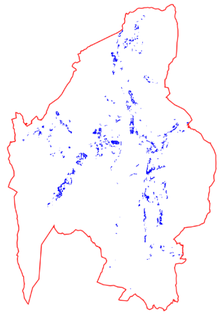
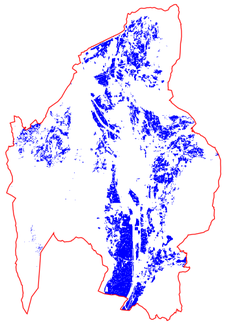
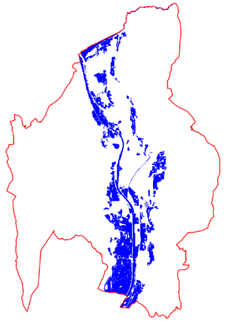
Ecosystem service hotspots

HABITAT FOR BIODIVERSITY	RISK MITIGATION	NOISE REDUCTION	RECREATION	AIR PURIFICATION	FOOD PRODUCTION	COOLING
						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Article

Assessing Nature-Based Recreation to Su
Green Infrastructure Planning in Trento (

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Research Article

Mapping and assessing ecosystem service
support urban planning: A case study on
regeneration in Trento, Italy

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Estimating the cooling capacity of green infrastructures to support urban planning

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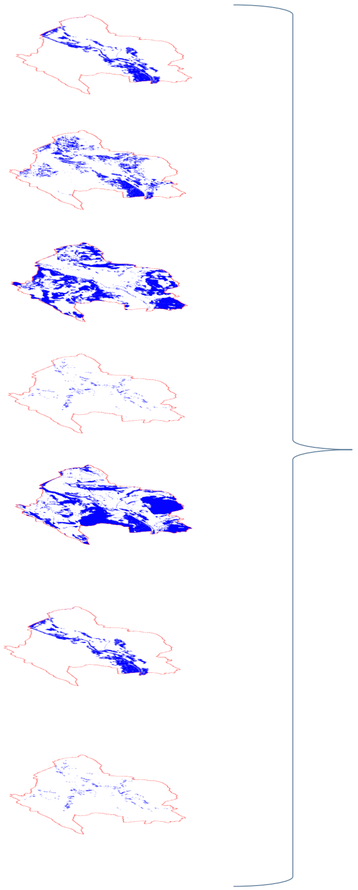
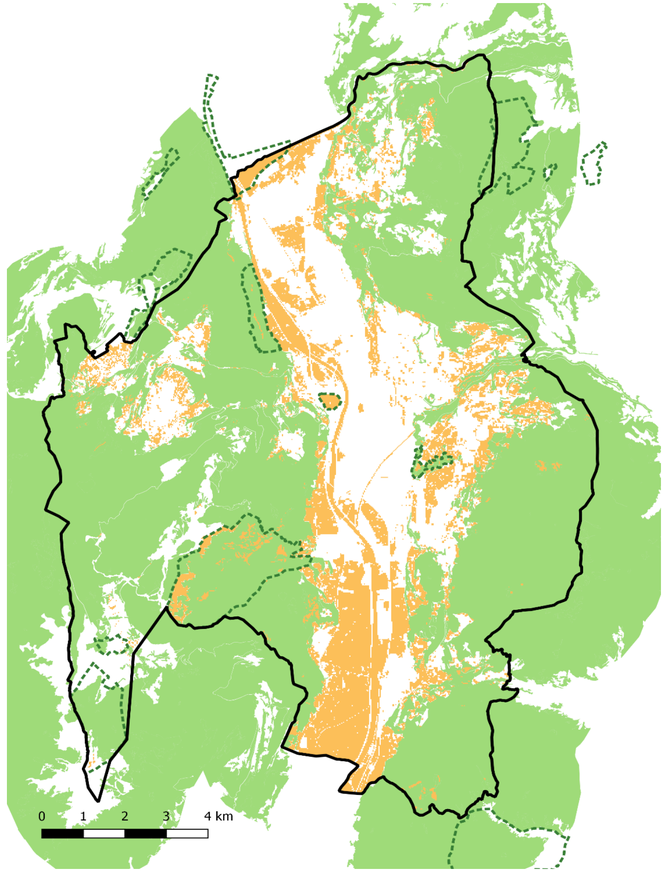
“Structural elements” of the Urban Plan





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Defining performance levels for urban interventions

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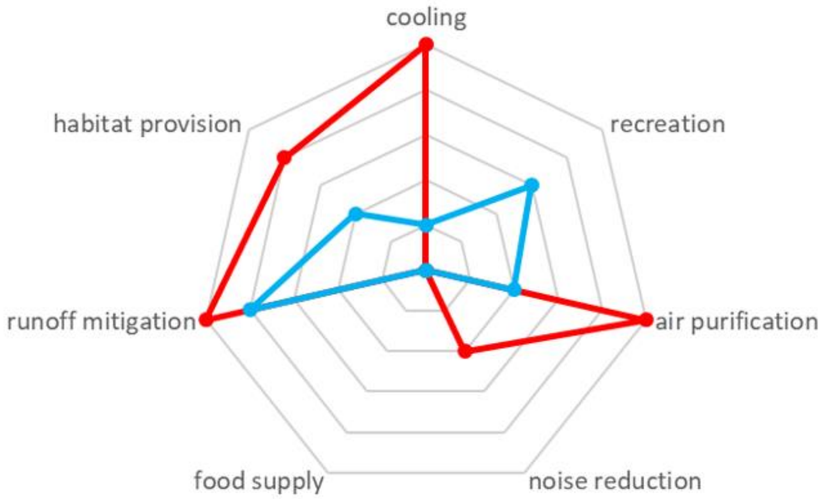
1. Assessing impacts on ES supply



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2. Considering ES demand (beneficiaries)

assess the impact on ES supply → **assess the level of ES demand** → define the required performance

ES	Example of possible indicators
RECREATION	inhabitants with no access to recreation facilities
COOLING	inhabitants in different age groups
AIR PURIFICATION	population density
NOISE REDUCTION	inhabitants in different exposure class
FOOD SUPPLY	inhabitants with no private garden

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3. Defining the required perfomance

assess the impact on ES supply → assess the level of ES demand → **define the required performance**

Measures to support ES provision, either **on-site** (e.g., sealing rate, vegetation density) or **off-site** (e.g., contributing to urban gardens or recreational areas)

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Open issues

Progress towards performance-based planning informed by ecosystem service knowledge. But…

- Resolution (data and models vs. urban intervention scale)
- What trade-offs among ES are acceptable?
- Flexibility (expanding the ES; weighting indicators based on planning objectives)
- Transparency vs complexity (both in the analysis and in the implementation phase)

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