



# Blue-green networks to support ecological infrastructure in human dominated environments

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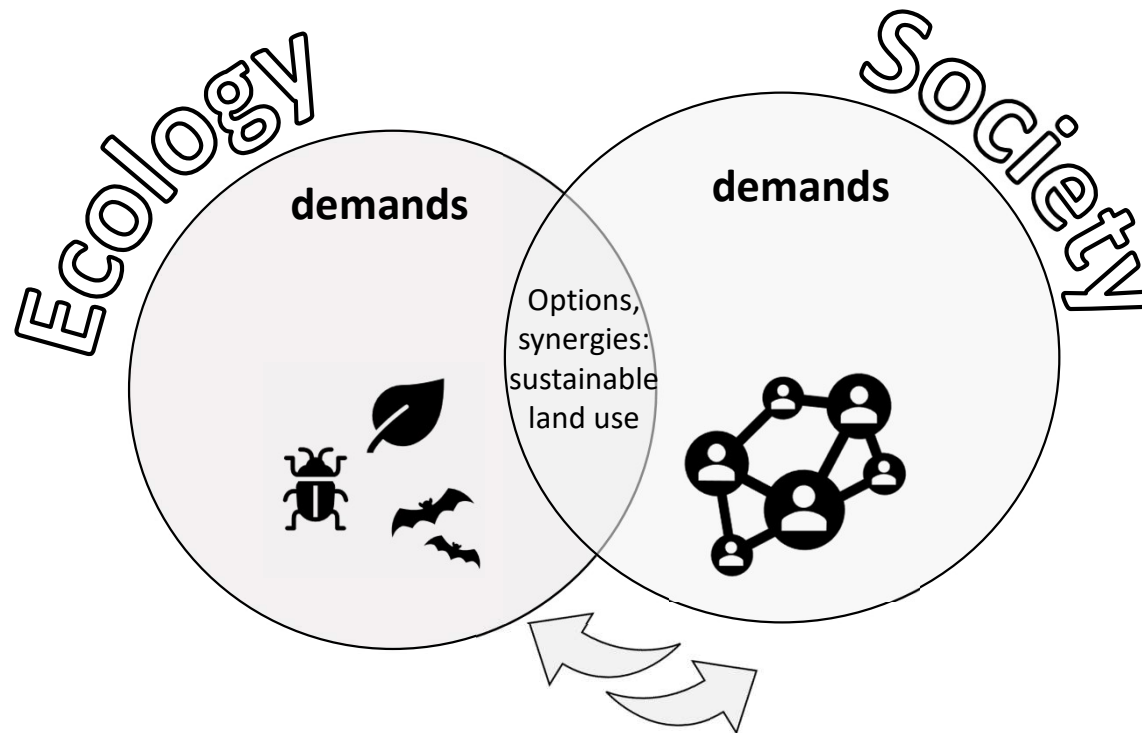
# Trends in land use in Switzerland

Land-change between 2009-2018:

**Settlements increase +6%** (+181 km<sup>2</sup>). Mainly in the lowlands and mainly at the expense of

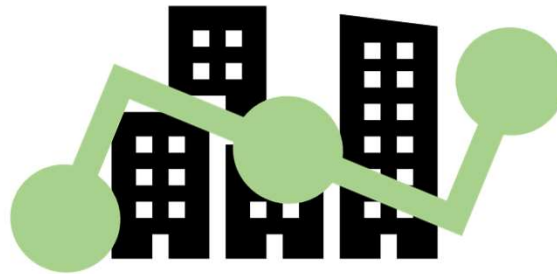
**Agricultural land -2%** (+302 km<sup>2</sup>)

**Forests/woody areas +2%** (+206 km<sup>2</sup>), mainly at elevations > 1000m asl, particularly Jura and southern Alps



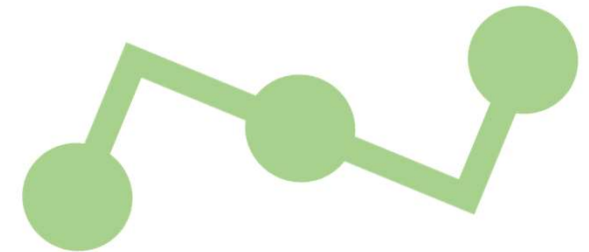
# Biodiversity in human-dominated areas

Habitat loss



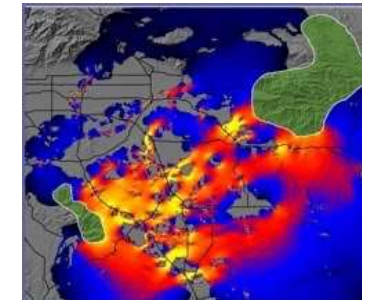
Urban natural capital:  
blue-green infrastructure

Protected areas



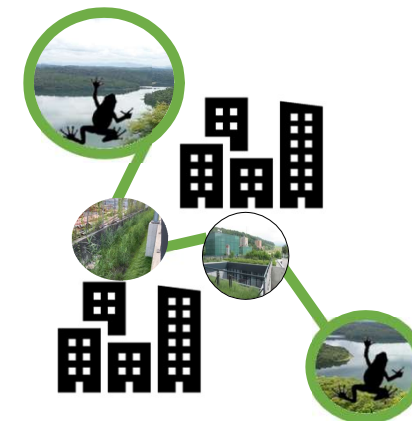
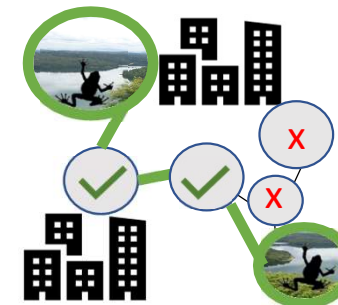
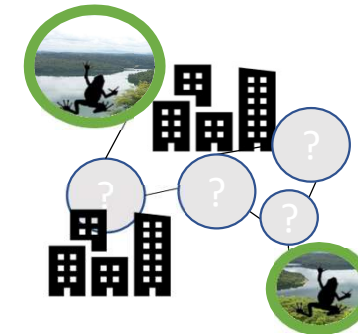
# Blue (*aquatic*) – green (*terrestrial*) infrastructure (BGI)





# Goal: BGI options

1. Amphibians: example species group
2. Derive habitat needs from monitoring data
3. Modelled habitat potential and corridors: ecological networks
4. Delineating **solutions for blue-green infrastructure** – where?



# ... a bit in more detail

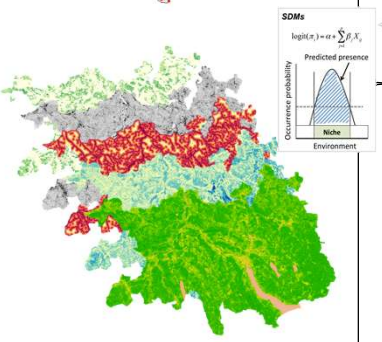
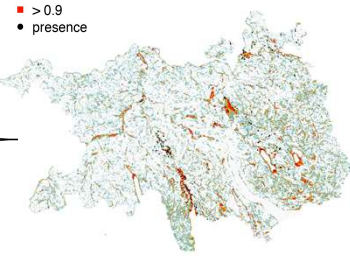


2017-2019  
Amphibian species from  
monitoring data  
Presence/pseudo-absences

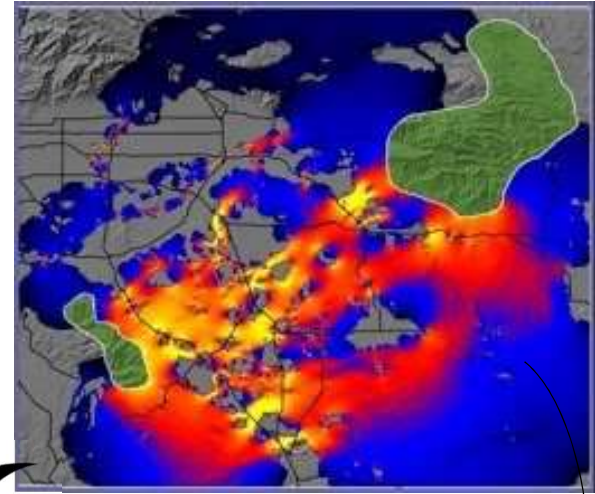
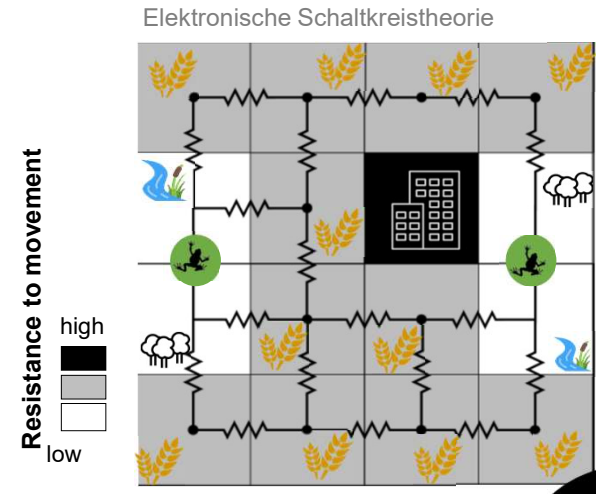
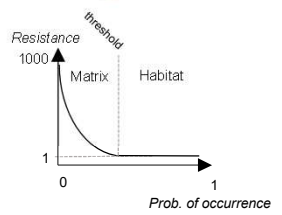


Habitat suitability map

% Prob. occurrence  
 > 0.3  
 > 0.6  
 > 0.9  
 • presence



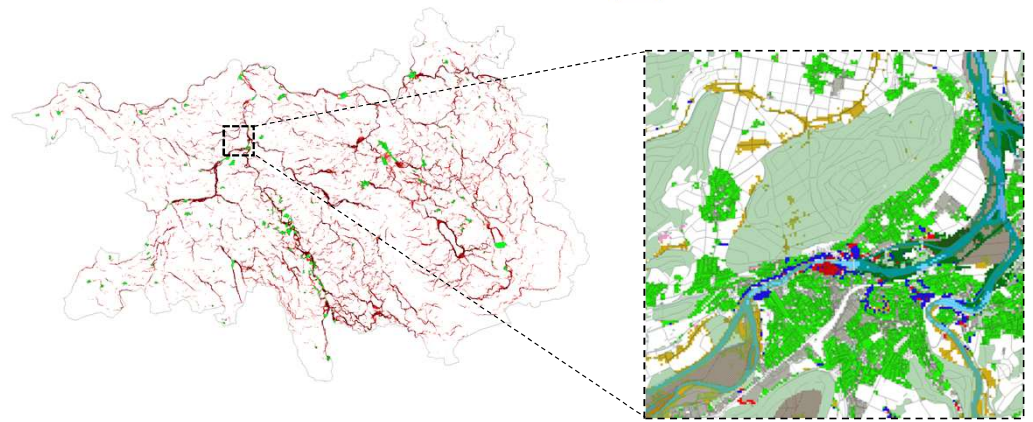
13 predictors for the whole  
life cycle at a 30m  
resolution



McRae et al. 2008, Anantharaman et al. 2019

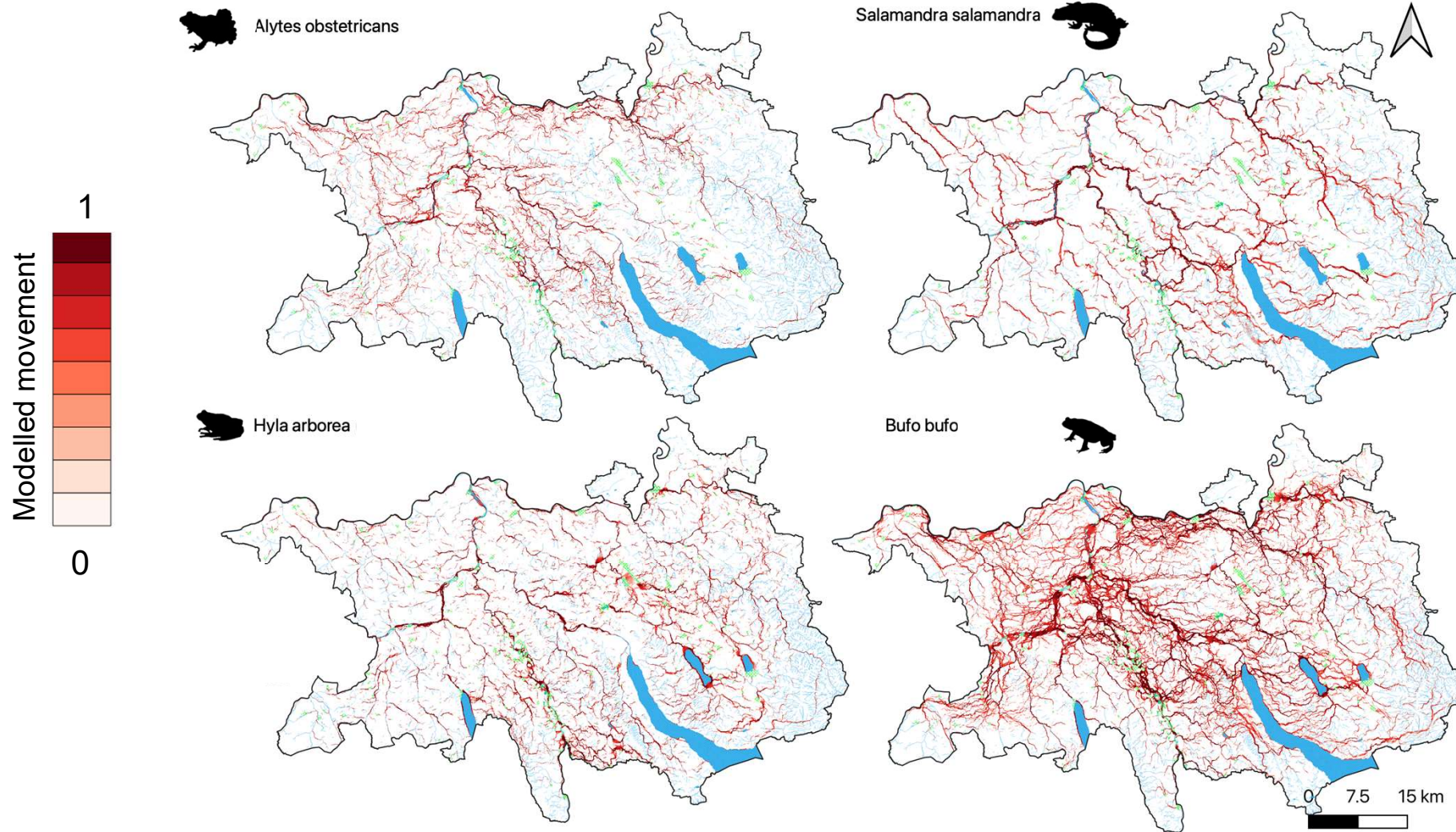
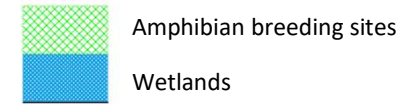
Most important amphibia corridors

Impervious  
 BGI candidate area (Graue Transition)  
 Urban green  
 BGI candidate area (Grüne Transition)

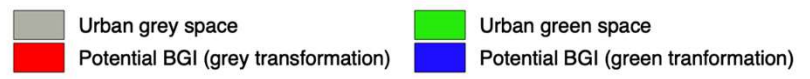
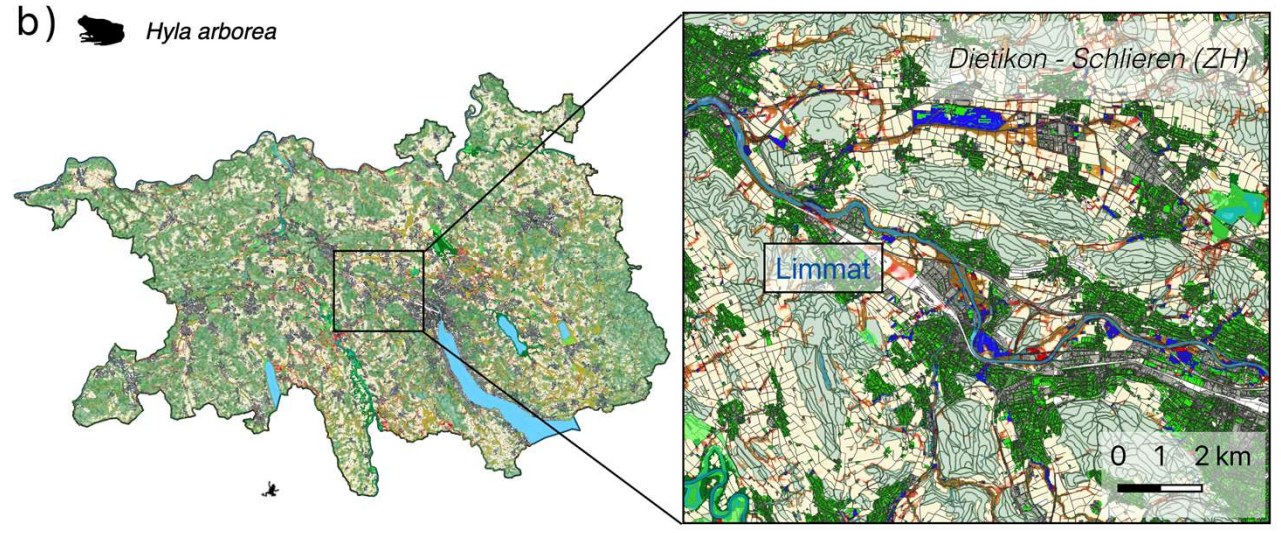
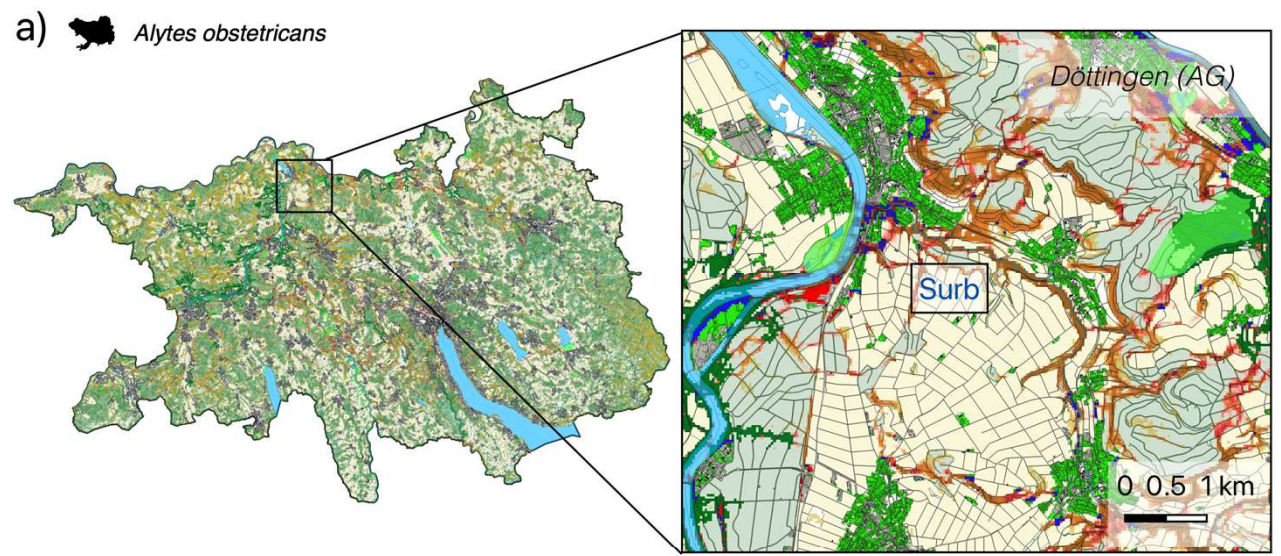


Donati et al. in review

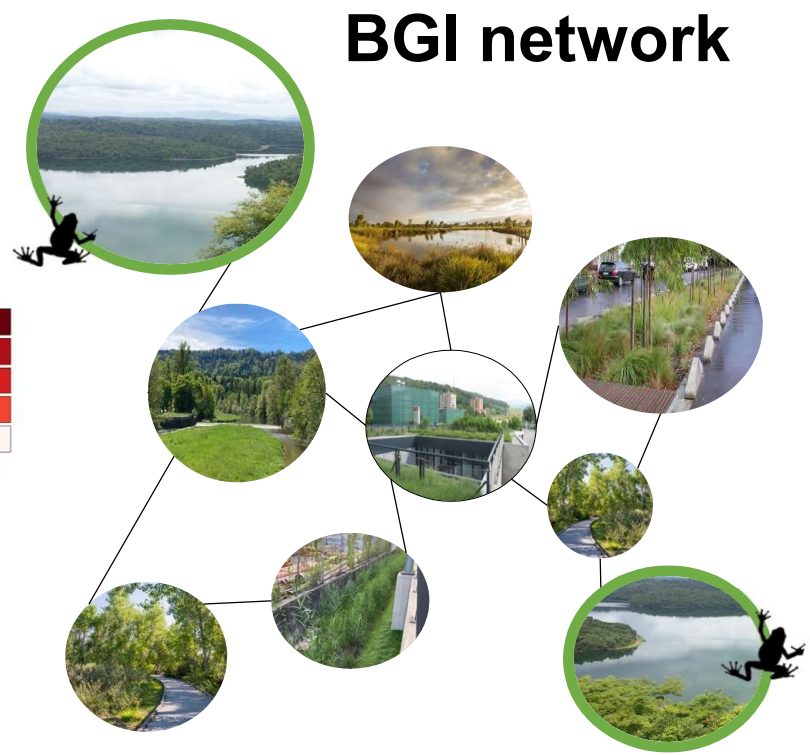
# Modelling amphibian connectivity



# Example options for BGI in peri-urban areas

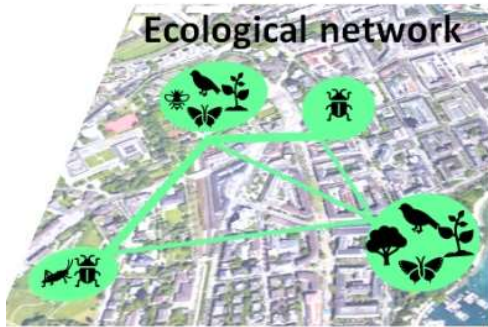


Normierte Artenbewegung / mouvements normalisés des espèces

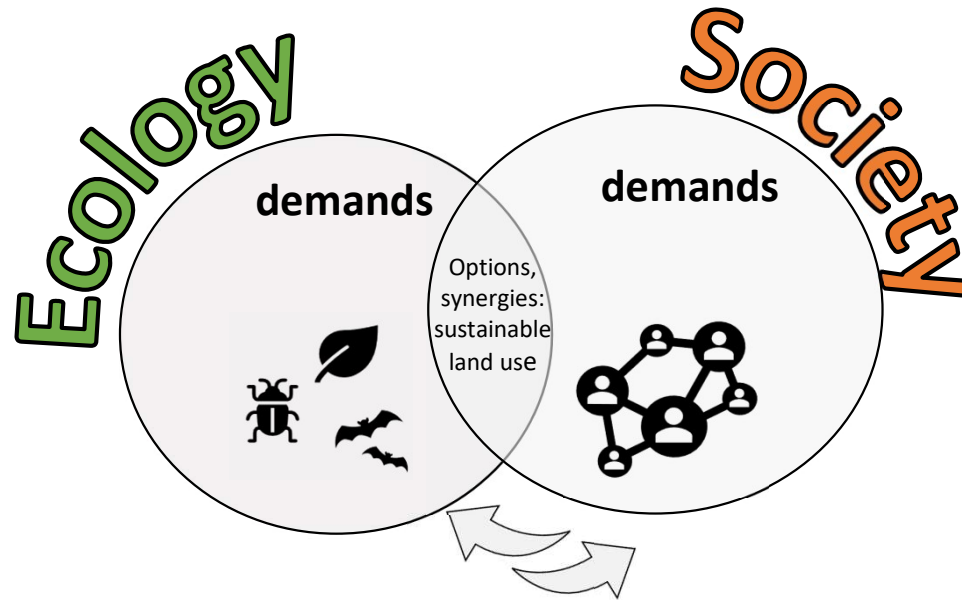




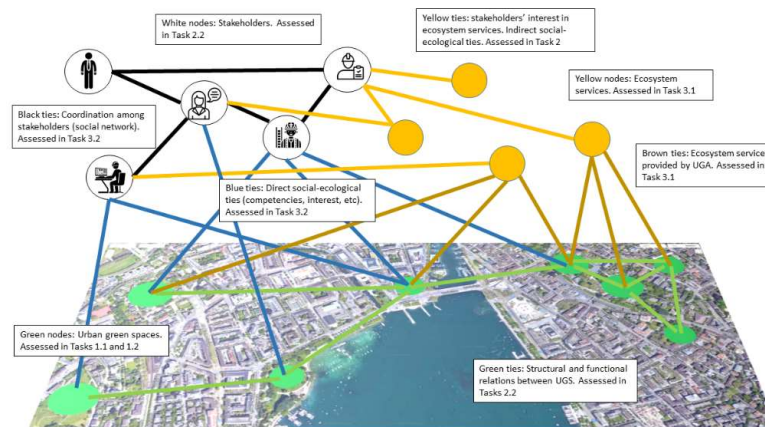
# BlueGreenNet project



Habitat suitability and connectivity modelling



Actors at all levels (stakeholder workshops, surveys)



**Blue-Green Biodiversity Research Initiative**  
 An Eawag-WSL collaboration focusing on Biodiversity at the interface of aquatic and terrestrial ecosystems.



# Thank you !



**eawag**  
aquatic research ooo



## BlueGreenNet: Social-ecological networks to enhance blue-green biodiversity in human dominated landscapes

*Implementation track project (2021-2024)*



 @giulidonati11

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