Integrated Conservation and Restoration Planning within a Central-European Cross-border Region

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Addressing biodiversity and climate change requires meaningful and nature-positive actions across scales (Jung et al. 2024).

Implementable proposals to expand protected areas or improve their management require the consideration of context-specific constraints and values.

Our study region surrounds the Fertö-Neusiedler See, the largest European endorheic lake situated in both Austria and Hungary.

The region has an over 8000 year long cultural history and has been shaped by complex land tenure and agricultural systems.

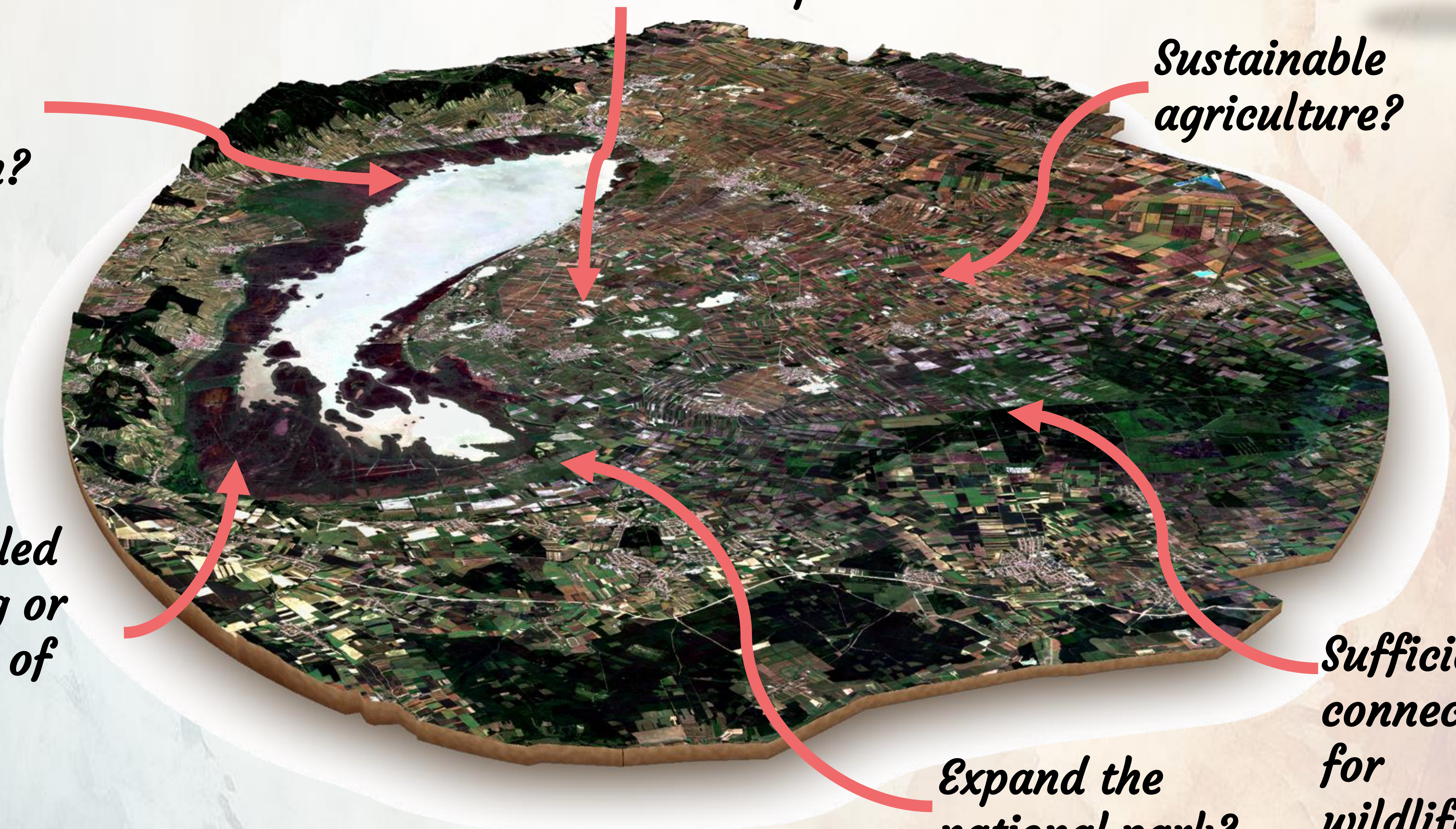## How and where could management options that work for nature and people be realized?

Water demand and wetland preservation?

Sailing, fishing, tourism?

Sustainable agriculture?

Controlled burning or cutting of reed?

Expand the national park?

Sufficiently connected for wildlife?

Stakeholder-driven
Why: Different policy- and locally-relevant objectives and values.

Multi-realm
Why: Conservation conflicts and potentials transcend the freshwater-terrestrial realms.

Multi-objective
Why: Realistic conservation should account for contrasting demands, costs, and preferences.
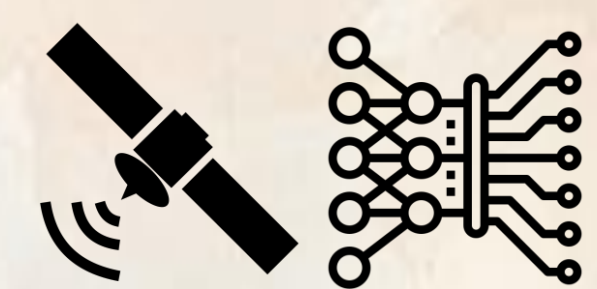
Multi-time
Why: Climate change affects the distribution and resilience of current and future biodiversity.

Methodology

Engaging local stakeholders, targeted interviews about preferences and visions

Detailed freshwater and terrestrial vegetation mapping (Sentinel 1/2 + UNet Deep Learning)

Dynamic species occurrence and population forecasts (Jung 2023)

Multi-objective spatial conservation planning (MILP, prioritizr, Hanson et al. 2019)

Sectoral indicator quantification and evaluation, including monetary valuation

INSPIRE
INtegrated Spatial Planning across REalms

biodiversa+
European Biodiversity Partnership