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Floodplain restoration to improve green infrastructures and address multiple management objectives in an urban context: the case study of the Lobau

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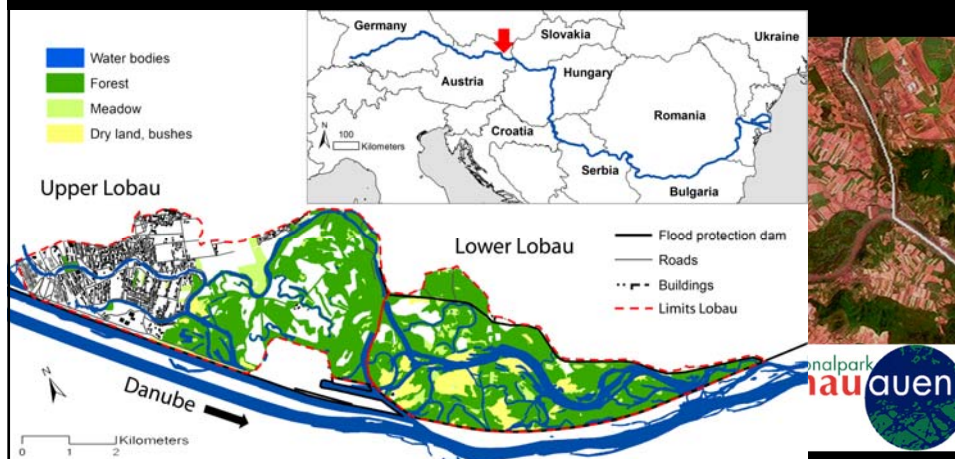
ECRR conference, Vienna, September 2013



FWF



Urban floodplain Lobau



Size: 1,039 ha (280 ha Lower Lobau area)

Length: 10 km in total, Connectivity: only at downstream end



Important role of floodplains in urban context

- Important large green infrastructures
- Connecting important corridors and protect areas at larger scales
- Islands of extremely rare habitats in urban context
- High value for society in terms of e.g. recreation

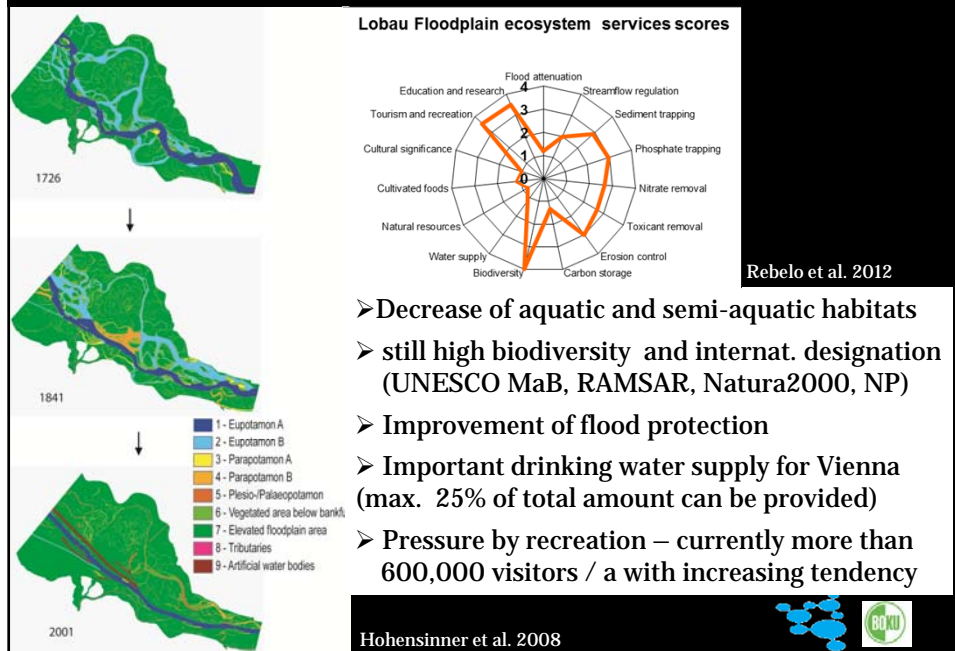


Major challenges and constraints

- Land use change – urbanization
- River regulation – navigation and flood protection
- Changes at catchment scale: nutrients, sediment transport, invasive species
- Multiple uses



Uses and Conflicts



- Decrease of aquatic and semi-aquatic habitats
- still high biodiversity and internat. designation (UNESCO MaB, RAMSAR, Natura2000, NP)
- Improvement of flood protection
- Important drinking water supply for Vienna (max. 25% of total amount can be provided)
- Pressure by recreation – currently more than 600,000 visitors / a with increasing tendency

Questions and approach

- What sectors benefit from ecological restoration?
- For which options the highest trade-offs can be identified and what are compromise solutions?
- Approach:
 - Define management sectors, options addressing key problems, include stakeholder preferences, use MCDA software (mdss5)



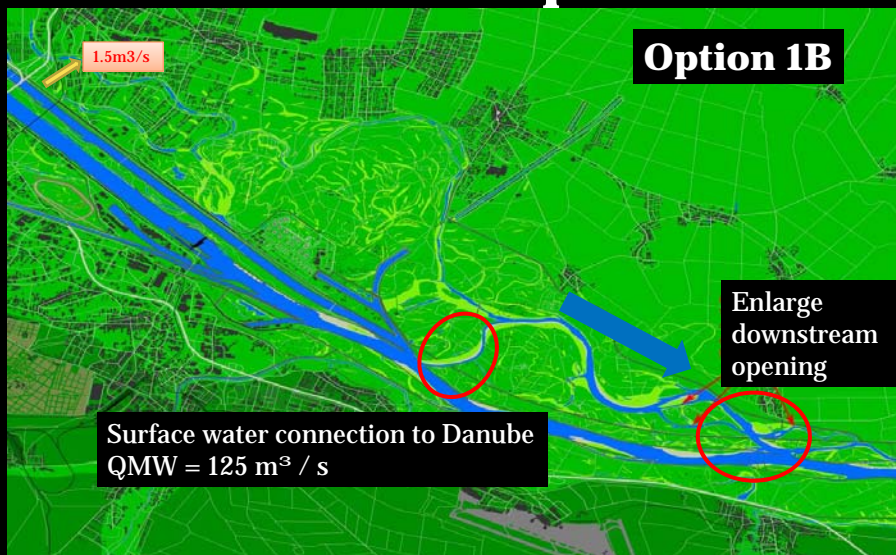
Map of measures



Hein et al., (2008)



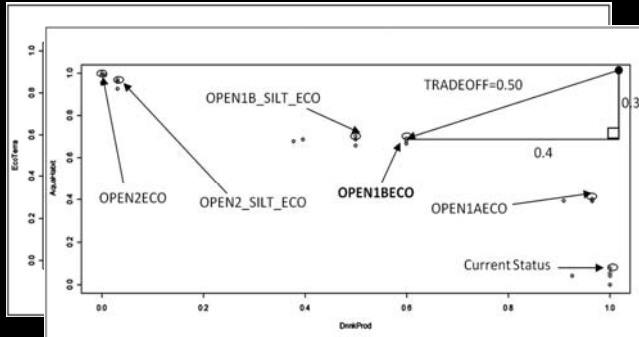
Preferred option



Sanon 2011



Results: Quantified Trade-Offs



- Non-dominated options formed the trade-off curve between two criteria
- Trade-offs were quantified as the shortest distance to the theoretical ideal solution
- Options that provided this shortest distance are **bolded out**
- **Stakeholder weights came to same result**

11



Conclusions

- **Current status was not preferred by any sector**
- Realistic measures identified to improve ecological conditions
- Ecological restoration beneficial for other sectors as well
- Uses including fishery, recreation and even agriculture was possible under increased hydraulic connectivity
- For higher connectivity options, additional measures to secure drinking water production recommended
- Case study shows importance of floodplain restoration to provide multiple use green infrastructure

12



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THANK YOU!

