

Surface-groundwater interactions in karst: overview, concept and mapping

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PROBLEM ADDRESSED:

- identification, characterization and determination of the spatial dimension of flood levels.

The conceptual framework and the key criterion for the determination and recording of areas subject to temporary flooding were developed.

FOCUS ON:

- the extent, duration and frequency of flooding.

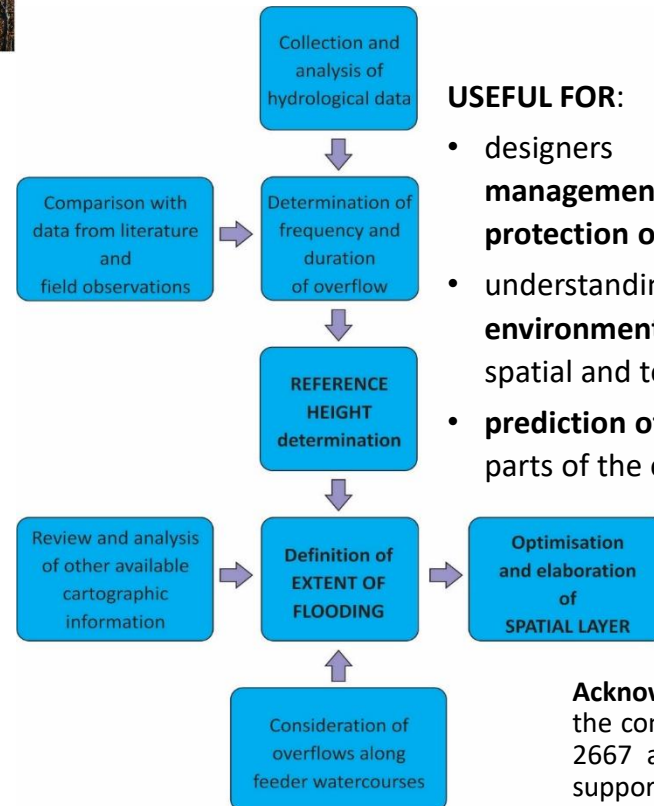
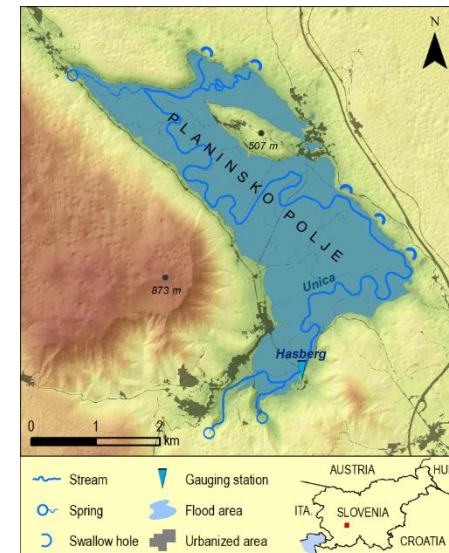
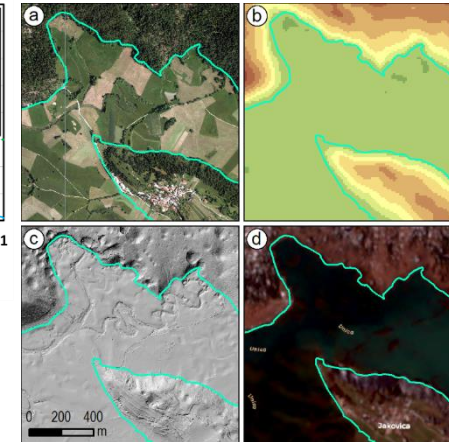
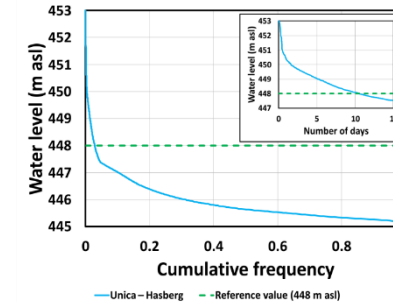
USEFUL FOR:

- designers of various **water policies** and **management mechanisms for flood mitigation and protection of special habitats**;
- understanding of karst aquifers **vulnerability to environmental changes** (by observing trends in the spatial and temporal dynamics of flood levels);
- **prediction of the effects of these changes** on other parts of the environment (e.g. hydrophilic habitats).

More on:

<https://link.springer.com/article/10.1007/s10040-020-02268-x>

Acknowledgments: This study was conducted within the context of the projects No. J6-8266, L1-7555, Z6-2667 and the programme No. P6-0119, financially supported by the Slovenian Research Agency.



Surface-groundwater interactions occur:

- As a result of special meteorological and hydrological circumstances;
- Due to groundwater-level rise in a karst aquifer or when the inflow of water exceeds the capacity of underground drainage channels;
- Characterized by high variability of occurrence and duration.

Flooding of karst poljes and shallow karst areas:

- Natural reservoirs of excess recharge and good flood regulators;
- Host unique wetland ecosystems with high levels of biodiversity;
- Provide various ecosystem services (e.g. ecological productivity, photosynthesis, carbon storage);
- Human activities have adapted to the natural conditions;
- Extreme events are the most common natural disasters in karst.