



Social perception of flood risk in maps – emotions or reality?

Jan D. Bláha

JE Purkyně University in Ústí nad Labem, Czechia

Department of Geography



SOCIAL ASPECTS OF NATURAL HAZARDS IN RESEARCH

- relatively high loss in property, unfortunately, sometimes even in health and life
- natural hazards are of interest to many specialized disciplines
- **FLOOD AND FLOOD RISK:** numerous amount of physical-geographical surveys
- relatively small amount of research projects is devoted to the social perception
- BUT: the attitude of people is crucial =>
- **cooperation** between inhabitants and representatives of the municipality
- **social interest** in natural hazards

BRILLY M, POLIC M (2005) Public perception of flood risks, flood forecasting and mitigation. *Natural Hazards and Earth System Sciences*, 5, 345–355.

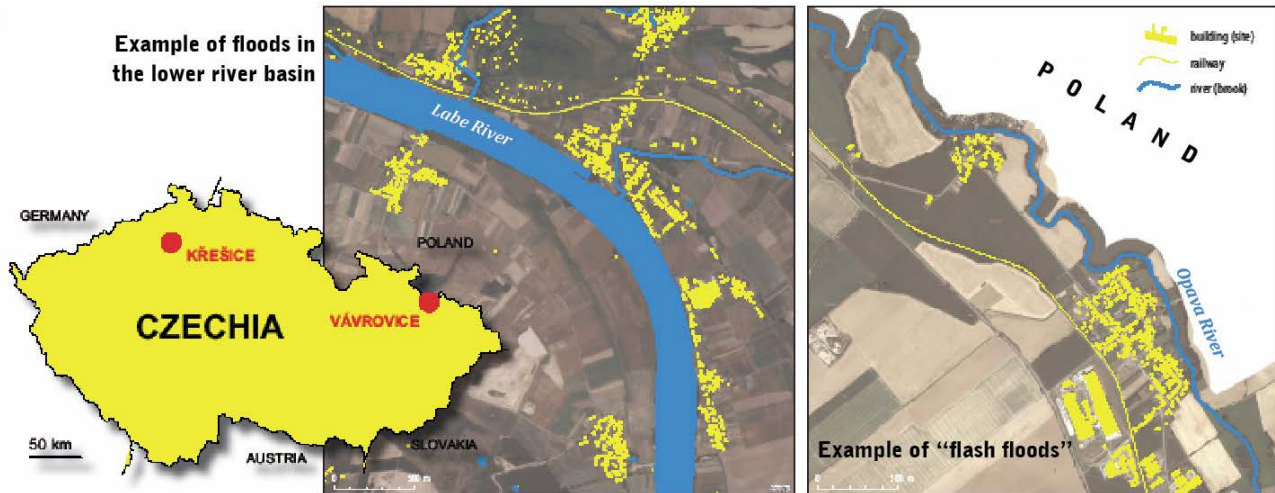
Social perception of flood risk in maps – emotions or reality?

SPATIAL MEMORY OF PEOPLE

- similarly crucial is **local knowledge** of residents
- the local people, enriched by the experience, providing a **valuable reflection of regional planning and flood protection measures**
- Some questions:
 - “Is the experience of natural disasters also intense in terms of spatial memory?”
 - “How inhabitants perceive spatially flood risks in their locality after some time?”
 - “How much coincide spatial ideas of inhabitants about safe and dangerous places with maps of flood risks and with maps of floodplains?”

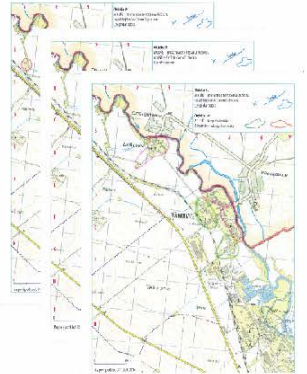
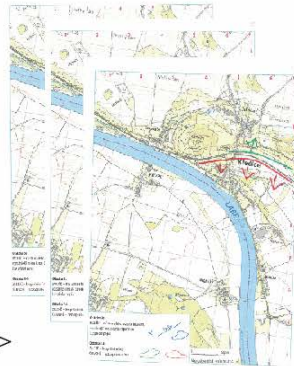
OUR RESEARCH – MAPPING OF FLOOD PERCEPTION

- **project:** social perception of flood risk
- **two model areas:** the settlement Křešice (Litoměřice Region) and Vávrovice (Opava region)



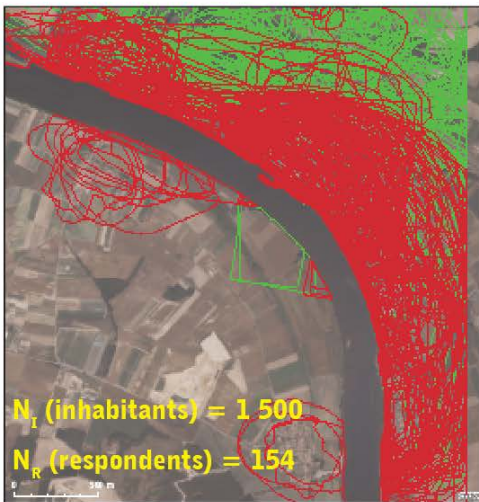
OUR RESEARCH – MAPPING OF FLOOD PERCEPTION

- **mental maps** of inhabitants (about 300 MM) as the significant methodological tool are used,
- mental maps were digitized by scanning, in ArcGIS for Desktop georeferenced,
- marks of the borders of dangers and safe locations/areas were vectorized



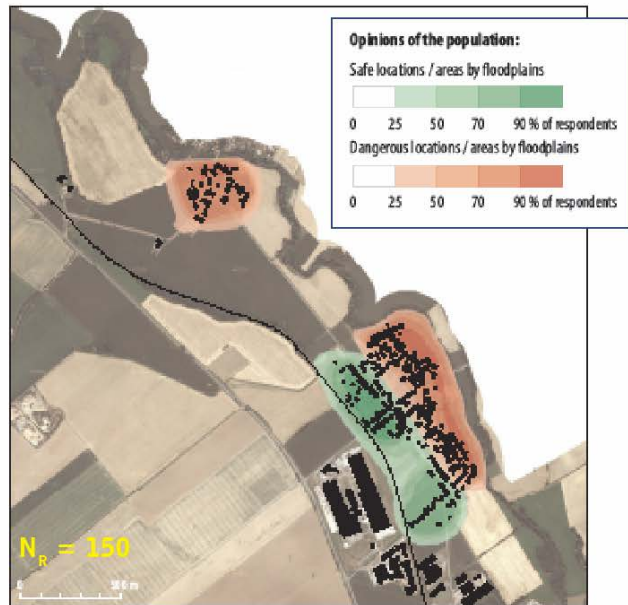
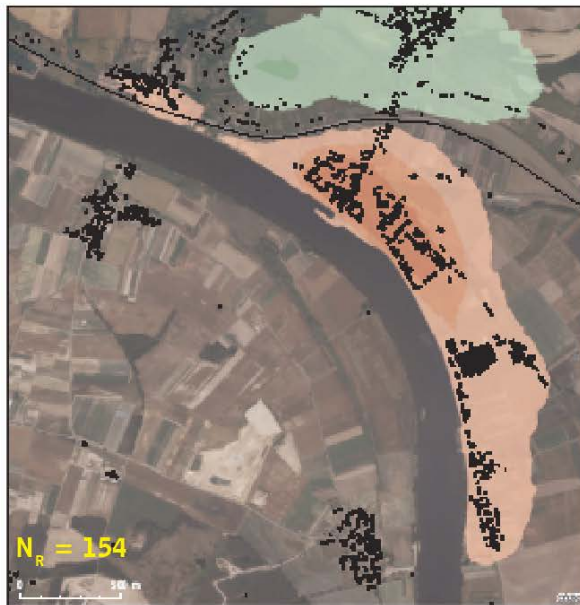
- sets of mental maps for aggregation =>

BORDERS OF DANGER AND SAFE LOCATIONS/AREAS

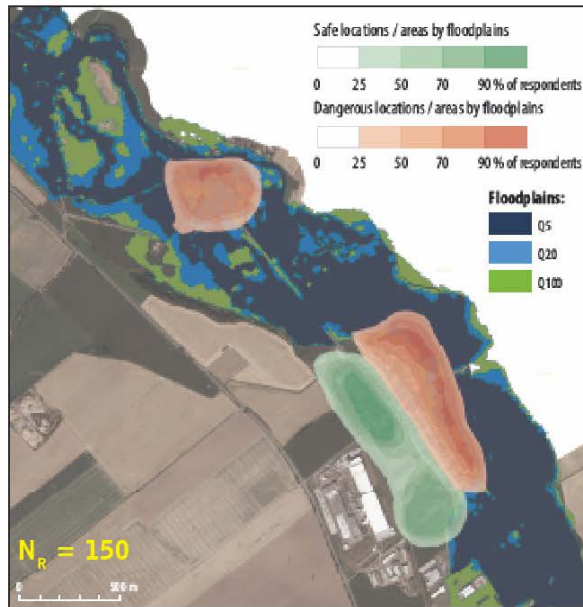


- aggregated and visualized by ArcGIS analytical tools (calculating feature polygons) concretely ArcTool "Count overlapping polygons"

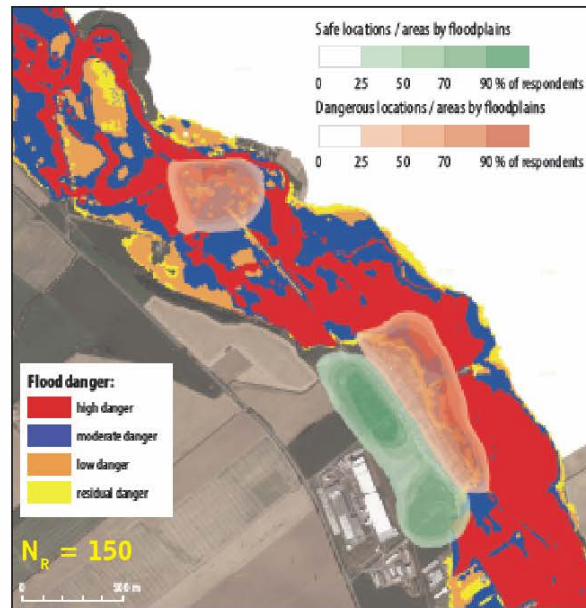
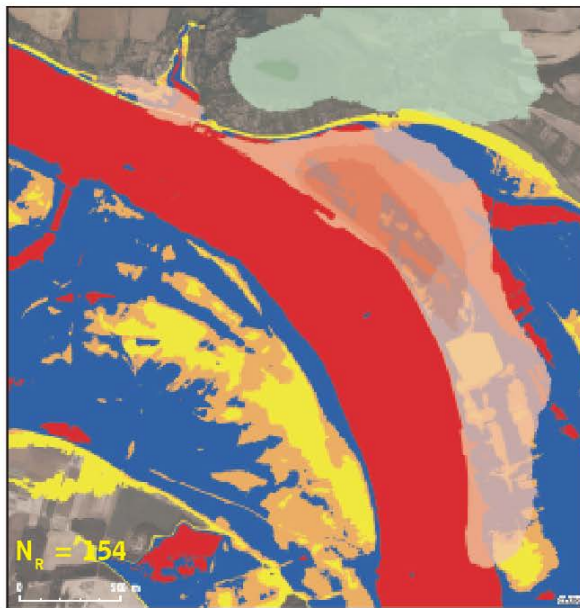
RESULTS OF OPINIONS



REALITY OR EMOTIONS? – COMPARISON WITH FLOOD EXTENT



REALITY OR EMOTIONS? – COMPARISON WITH FLOOD DANGER MAP



CONCLUSIONS

Opinions are influenced by:

- **localisation of buildings** (background of material possession) => not good message about society / society perceives not so intensely negative environmental impacts
- **altitude** => rational (e.g. Křemín Hill)
- **natural and anthropogenic boundaries** (e.g. railways, roads) => can be rational



CONCLUSIONS

Opinions aren't intensely influenced by:

- **basic characteristics of respondents** (gender, age, education, field of study) => need to be verified further



CONCLUSIONS

Opinions are influenced more by emotions than by real spatial memory and indicators:

- results do not correspond to map of flood danger, flood extent, flood boundaries, etc.
- results correspond more to locations of buildings, even those out of danger





Thank you for your attention

Jan D. Bláha

JE Purkyně University in Ústí nad Labem

Department of Geography

www.jackdaniel.cz
jd@jackdaniel.cz

Social perception of flood risk in maps – emotions or reality?