



Use of hydromorphological mapping for location of flood risk reduction measures. Case study: Blanice river basin, Czech Republic

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The paper presents a new methodological approach using hydromorphological monitoring data from river networks to identify stream elements that can be used in an integrated flood protection system. The goal of this research is to help locate stream modifications that negatively affect the course and consequences of floods and to identify elements of floodplains suitable for reinforcing their natural retention potentials.

The presented approach uses data derived from hydromorphological monitoring that conforms to the EN 14614 standard “Water quality – Guidance standard for assessing the hydromorphological features of rivers.” There were distinguished four major aspects of stream modifications potentially affecting the course and consequences of floods that can be derived from hydromorphological monitoring:

1. Modifications that speed runoff,
2. Modifications that restrict the retention potential of the floodplain,
3. Potential obstacles to the flood course and

4. Improper alterations of stream route modifications.

GIS is used to identify and locate these critical aspects of stream and floodplain modification.

This method was applied in the Blanice river basin, an area in central Europe hit by a severe flood in August 2002. The critical modifications identified were compared with geomorphological mapping to display the different effects of individual types of modifications.