



Identification of floodways by four approaches

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Humans are “urban species”. In Norway, more than 80 percent of the population are living in cities and towns. Urbanization has strong impacts on quality and quantity of local runoff as well as erosion and sediment transport. Flooding of urban areas poses great challenges to human safety and sustained economic growth. Together with urban development, increase of intensive rainfall in terms of magnitude and frequency due to climate change makes the problem of urban floods more challenging. Oslo, the capital of Norway is continually developing rapidly, uses the Stormwater tree step approach (S3SA) for an overland flood protection strategy. The two first steps are infiltration and detention of rain. The third step is to use safe floodways to drain water. Maps of floodways are crucial in urban flood mitigation and city planning. In this study, we use four methods to identify floodways. These methods are accumulation analysis based on single flow direction multiple flow direction algorithm, SIMulated Water Erosion (SIMWE) and fully dynamic surface flow modelling. The study compares the differences between the methods and highlights their advantages and disadvantages for various applications.

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