

**Drowley, Michael. Analysis of land-use changes in the Knysna river catchment and the associated flood risks: A focus on the Salt River. (BSc Honours thesis in Disaster Risk Science, 2007)**

This study examines the relationship between land-use/land-cover change (as indicators of urban expansion) and flood frequency and severity in the Knysna catchment area, focusing on the Salt River with the objective of characterising the river flood hazard component of a potential flood risk. River floods resulting from heavy rainfall are the most common disaster phenomenon and often result in the heaviest damage. In general, the removal of forest and other natural cover, the conversion of land for agriculture, and increasing urbanisation compact the soil and reduce infiltration rates, leading to higher flood peaks. Using HydroCAD software, the flood hydrology of the catchment was mapped, producing weighted curve numbers to indicate how much water may pass through the hydrological system as run-off. Together with a design rainfall package, HydroCAD was used to create storm hydrographs for a variety of rainfall conditions. It was found that urbanisation has a significant effect on the generation of more damaging peak flows as a result of increasing velocity and peak discharge. Additional risk factors caused by a lack of human agency when combined with a higher magnitude storm event result in an increased potential for damage and harm to residents located in and around the Salt River catchment.