
#ChooseUL
UNIVERSITY OF LIMPOPO
11 April 2026
09h00
Onkgopotse Tiro Hall,
University of Limpopo
FACULTY OF SCIENCE AND AGRICULTURE
DOCTOR OF PHILOSOPHY
Nkosi Mary
Finding solutions for Africa

CITATION

In her thesis, Ms Nkosi investigated how urbanisation affect soil morphology and catchment hydrology in the Crocodile River sub-catchment. By integrating machine learning, hydropedological mapping, and SWAT modelling, she quantified that expanding urban areas increase surface runoff and reduce baseflows. Crucially, her research demonstrated that high-resolution hydropedological maps significantly improve hydrological model accuracy over global standard datasets. This pioneering study provides practical tools for sustainable water and urban planning, highlighting the need to integrate soil management into development policies. The thesis yielded one publication and won best PhD presenter and poster awards at the 13th FSA and 2025 NRF NGER Symposiums.