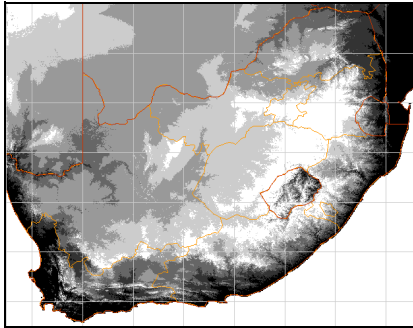


Technology Transfer for Flood Forecasting and Management in South Africa



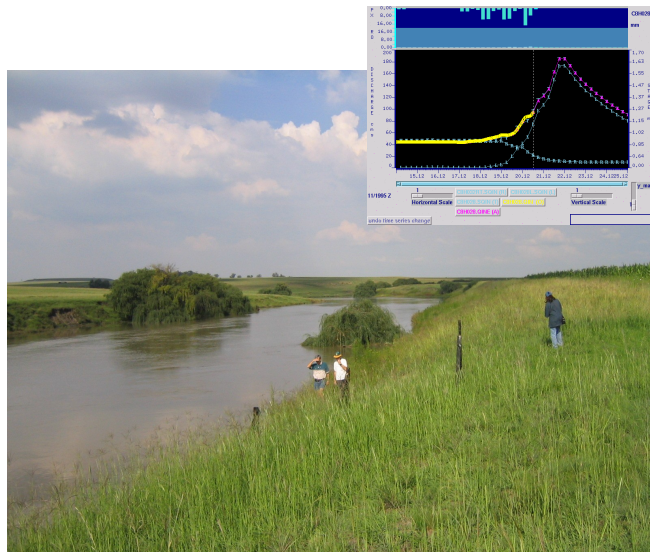
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**Friday, 13th January, 12:20-1:10pm
207 Sackett Building**

Abstract

The Department of Water Affairs and Forestry (DWAFF) of the Republic of South Africa is responsible for flood management of the major river basins in the country. For this purpose, DWAFF operates four large flood control dams and maintains a network of real-time streamgauge stations. However, the effective operation of the dams has proven difficult without advanced knowledge of expected reservoir inflow from the basins upstream. Most recently, in 1996, record flows above of Vaal Dam caused significant flooding and underscored the need for hydrologic forecasting capabilities. In 1998, with support from the US embassy in South Africa, the US National Weather Service (NWS) installed a prototype version of their River Forecast System (NWSRFS) for part of the Vaal River basin at the DWAFF flood management headquarters in Pretoria. Periodic expansion and training by the NWS and sub-contractors continued through 2003. In 2004 a more rigorous effort began to achieve operational status, improve model performance, and build capacity within DWAFF to implement and maintain the system. In the current configuration, the DWAFF NWSRFS covers most of the Vaal and Orange River basins, with 55 forecast points and 9 reservoirs. The hydrologic models used in the system include the Sacramento Soil Moisture Accounting Model, the Unit Hydrograph model, the Lag-K routing model, and the RES-J reservoir model. Model calibration was performed by manual methods where historical data was available. DWAFF now operates the NWSRFS as part of daily flood management activities and plans to expand the system to include additional river basins.



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