



## Welcome to the Post-COVID CWRR Newsletter!

It is with great pleasure that we announce the commencement of the CWRR Newsletter Series after the long COVID-forced hiatus. We look forward to bringing you all the exciting news and developments from the Centre and beyond!

## News You May Have Missed

### Prof. Jeff Smithers presents at the IAHS 2022 Scientific Assembly in Montpellier, France.

Professor Jeff Smithers recently presented a paper titled "*The Initiation of a National Flood Studies Programme for South Africa: Overview and Progress to Date*". Despite COVID restrictions, The XIth IAHS Scientific Assembly was successfully hosted in Montpellier, France from 29th May to 3rd June 2022 with a diverse scientific programme. The Scientific Assembly was the opportunity to celebrate the 100-year anniversary of the association, to look forward to the end of the Panta Rhei decade which will close in 2023, to envisage progress on the 23 Unsolved Problems in Hydrology, and to screen developments of Open Science and support to Agenda 2030 in water-related fields. Prof. Smithers, thank you for continuing to fly the CWRR flag high!

### International Engineering Associate Award for Prof. Jeff Smithers

More good news for Prof. Smithers. As the Umgeni Water Chair of Water Resources Research and Innovation and Director of the Centre for Water Resources Research (CWRR) at UKZN, Prof. Smithers has been recognised as a Distinguished International Associate (DIA) by the Royal Academy of Engineering (RAEng) in the United Kingdom (UK). The RAEng DIA programme enables the intensification of collaboration and connection between excellent international engineers and institutions or individuals in the UK with the view to develop a broad international community or network of excellent diverse engineers across countries and disciplines. This contributes to the RAEng's goal of an inclusive economy and sustainable society, and it awards up to 12 associates annually. Our heartfelt congratulations to Prof. Smithers!

### Departure of Dr. David Clark

The CWRR was saddened to learn of the departure of Dr. David Clark from the Agricultural Engineering Department and the CWRR. Dr. Clark has been with Ag. Eng for 18-years as a researcher and is departing to join the South African Sugarcane Research Institute (SASRI). The CWRR wishes to thank Dr. Clark for all his contributions in Ag Eng and the CWRR in all these years and we wish him all the very best Dr. Clark and hope to keep collaborating with him in future endeavours.

## The CWRR Newsletter Online

The Newsletter is also available online at [CWRR.ukzn.ac.za](https://www.cwrr.ukzn.ac.za) and on social media on:



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For suggestions and queries, please email [NgcoboS21@ukzn.ac.za](mailto:NgcoboS21@ukzn.ac.za).



High Flying: Prof. Jeff Smithers



Farewell: Dr. David Clark

## Umgeni Water Chair hosts online symposium

Hosted on the 31<sup>st</sup> of March 2022 by the Umgeni Water Chair in consultation with the Umgeni Water (UW) R&D Manager, the symposium provided feedback on progress made to industry leaders at UW and provide opportunities for questions and discussion. The symposium also created awareness at both UKZN and UW of research which is funded at UKZN by UW. Further, the event sought to break down some of the research silos and promote collaboration and also promote multi-disciplinary collaboration where appropriate. Also discussed at the symposium were strategies to promote communication and collaboration between researchers, students and UW. The symposium enabled UW funded students to present their research to a broader audience including extended Umgeni Water staff and UKZN academics across the university. The virtual event comprised of four sessions covering the following topics, Water Equity and Aquatic Ecosystems, Flood Studies and Water Supply, Water Reuse and Sediment Erosion and Water and Sludge Treatment.

Positive feedback on the event was received and it was agreed that the objectives of the symposium were largely met and that the event should be repeated annually.

## Dr. Eddie Riddell appointed Section Editor for Koedoe

More exciting news for the CWRR. Dr Eddie Riddell was recently appointed the Section Editor, Freshwater in the Journal "Koedoe: African Protected Area Conservation and Science". Centre members and partners are *highly* encouraged to consider submitting papers to the journal. Koedoe is an AOSIS open access journal, so for anyone who is working in freshwater ecosystems, this is a great opportunity to get published.



## Upcoming Events

- ◆ **10-12 October 2022:** South African Hydrological Society (SAHS) Inaugural Conference



Congratulations to Dr. Eddie Riddell

## Recent Publications

**It has been a particularly busy and exciting period for members of the CWRR, a number of publications have come out of various projects recently. Sincere congratulations to all involved!**

- Gericke, OJ, Pietersen, JPJ, Smithers, JC, du Plessis, JA, Allnut, CE and Williams, VH. 2022. *Development of a regionalised approach to estimate areal reduction factors and catchment response time parameters for improved design flood estimation in South Africa*. WRC Project K5/2924. Water Research Commission, Pretoria, South Africa. 176 pp.
- Loots, I, Smithers, JC and Kjeldsen, TR. 2022. Quantifying the influence of urban development on runoff in South Africa. *Urban Water Journal*, DOI: 10.1080/1573062X.2022.2027472 14 pp.
- Mouton, JvS, Loots, I and Smithers, JC. 2022. *Assessment and Development of Synthetic Design Storms for Use in Urban Environments: Gauteng Pilot Study*. WRC Project No. C2020-2021-00657. Water Research Commission, Pretoria, South Africa. 126 pp.
- Schütte, S, Schulze, RE, Clark, DJ, Kunz, RP, Wolski, P, Lumsden, T, Smithers, JC, Stuart-Hill, SI, Thornton-Dibb, SLC, Horan, MJC, Toucher, ML and Jele, Z. 2022. *A National Assessment of Potential Climate Change Impacts on the Hydrological Yield of Different Hydro-Climatic Zones of South Africa: Report 1 - Methodology and Results*. Draft WRC Report No. K5/2833/1&2. Water Research Commission, Pretoria, RSA. 237 pp.
- Riddell, E. S., Boyd, L., Petersen, R. M., & Heath, R. G. M. (2022). Protected areas and the diffuse pollution problem: rivers of the Kruger National Park, South Africa. In *Land Use and Water Quality: The Impacts of Diffuse Pollution* Edited by Puangrat Kajitvichyanukul; Brian D'Arcy, IWA Publishing DOI: <https://doi.org/10.2166/9781789061123>
- Keates, C., Conradie, W., Dalu, T., Dondofema, F., Riddell, E. S., & Wasserman, R. J. (2022). Phylogenetic placement of the enigmatic Floodplain water snake, *Lycodonomorphus obscuriventris* FitzSimons, 1964. *Koedoe*, 64(1), 9.
- Brewer, K.; Clulow, A.; Sibanda, M.; Gokool, S.; Odindi, J.; Mutanga, O.; Naiken, V.; Chimonyo, V.G.P.; Mabhaudhi, T. Estimation of Maize Foliar Temperature and Stomatal Conductance as Indicators of Water Stress Based on Optical and Thermal Imagery Acquired Using an Unmanned Aerial Vehicle (UAV) Platform. *Drones* **2022**, 6, 169. <https://doi.org/10.3390/drones6070169>
- Brewer, K.; Clulow, A.; Sibanda, M.; Gokool, S.; Naiken, V.; Mabhaudhi, T. Predicting the Chlorophyll Content of Maize over Phenotyping as a Proxy for Crop Health in Smallholder Farming Systems. *Remote Sens.* **2022**, 14, 518. <https://doi.org/10.3390/rs14030518>
- S. Gokool, R.P. Kunz, M. Toucher, Deriving moderate spatial resolution leaf area index estimates from coarser spatial resolution satellite products, *Remote Sensing Applications: Society and Environment*, Volume 26, 2022, 100743, ISSN 2352-9385, <https://doi.org/10.1016/j.rsase.2022.100743>