

For Immediate Release

To: All Media

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Attention: News Editors / Agricultural Writers

ARC research on peatlands aligns with theme of World Wetlands Day 2021: “Wetlands and Water”

Pretoria: World Wetlands Day is celebrated annually on 2 February. Water Science researchers at the Agricultural Research Council are conducting wetland related research projects as part of the ARC’s focus on sustainable natural resource management in South Africa.

Wetlands are not isolated features in the landscape but are part of the water cycle. Water connects the wetlands in a catchment to our rivers, lakes, estuaries and the sea. Wetlands store water from rainfall, surface water runoff and/or groundwater. They accumulate organic material and are characterized by robust vegetation that is important for reducing the velocity of water flow during heavy rainfall events. They also act as natural filters. Different wetland types play a crucial role in providing ecosystem services involving water as a lifeline to humans and nature alike. One of the more scarce types of wetland is peatland.

Peatlands comprise only 1% of the total wetland area in the country. They consist of partially decayed vegetation or organic matter and are groundwater dependent. Given that there has been a significant increase in peat fires across South Africa, more research is needed to understand the implications of these sub-surface fires, which can only occur when a peatland is no longer saturated throughout the year due to a drop in the water table.

The Water Science research team at ARC-Soil, Climate and Water is conducting a project in partnership with Ezemvelo KZN Wildlife, funded by the Water Research Commission, which aims to determine the consequences of peat fires and develop rehabilitation protocols for these ecosystems. Two of the study sites are the Muzi Swamp, located within the Tembe Elephant Park, and Vazi peatland complex, located within the Manzengwenya state plantation (uMhlabuyalingana Local Municipality in northern KwaZulu-Natal). Water level monitoring equipment was installed at the study sites to determine how the degraded peatland systems will respond to rainfall events (see Figures 1 and 2). After a total of 79 mm was received in late January (rainfall associated with tropical cyclone Eloise), it was apparent that the burnt ash layer becomes impermeable to water movement. Figure 3 shows that below a depth of 4 cm the peat ash was completely dry, whilst at 25 cm the peat became saturated.

A degraded wetland (e.g. burned peatland or infilled, drained and eroded system) will not only lose its various functions but also its resilience. Resilience is the ability of a system to cope with change and to bounce back in its ability to function. Much more rain and time is needed in order for these degraded peatlands to fully recover.

The ARC team says that wetlands have the ability to contribute to local and national water security, if allowed to perform their natural functions. They should be managed as an integral part of the country’s catchments and landscapes, and be afforded the opportunity to maintain their resilience so that we can reap the benefits of “wetlands and water” – the theme for World Wetlands Day 2021. The alternative scenario of “no wetlands, no water” is simply not an option!



Figure 1: Vazi peatland with monitoring well installed to measure the water level.



Figure 2: The ARC project team monitoring water levels at the Muzi Swamp on 27 January 2021.



Figure 3: Cut open burnt peat hummock from the centre of the Vazi peatland indicating dry peat ash from 4 cm depth.

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Notes to the Editors

About the Agricultural Research Council

The Agricultural Research Council is a premier science institution that conducts research with partners, develops human capital and fosters innovation in support of the agricultural sector. The ARC provides diagnostic, laboratory, analytical, agricultural engineering services, post-harvest technology development, agrochemical evaluation, consultation and advisory services, food processing

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