

A multiyear collaborative effort between the Water Research Commission (WRC), CSIR, the South African National Biodiversity Institute (SANBI), Working for Wetlands (WfWET) and the Coaltech Research Association has resulted in an innovative suit of products to limit and mitigate the impact of coal-mining on wetlands.

Background



By virtue of their position in the landscape and relationship to drainage networks, wetlands are frequently impacted by coal-mining activities, especially opencast mining. These impacts will be ongoing, since coal is a strategic resource and will continue to be mined extensively to support the country's development.

At the same time, however, regulatory authorities and the public now have an improved understanding of the range of economic, social, ecological, hydrological costs of wetland loss and degradation. The rules of the game have changed, with regulators increasingly insisting that mines avoid, minimise and mitigate their impacts on wetlands, and internalise the true costs of wetland loss into their balance sheets.

This sparked a partnership between the WRC, CSIR, SANBI, WfWET and major coal producers through the Coaltech Research Association to limit and mitigate the

sector's impact on the catchment's wetlands, and the resultant suit of tools to assist the sector.

High-risk wetlands Atlas and user's guide

This Atlas guides regulators and miners with regards to high-risk wetlands and associated landscapes. It identifies key wetland landscapes in Mpumalanga that are particularly important for irreplaceable in terms of biodiversity, water resource management and ecosystem services. There is a users' guide to the Atlas and a DVD that contains the Atlas itself, as well as software to use it.

Wetland offsets – A best practice guideline

At present, every development which impacts on a wetland leaves the overall wetland network worse off than before, and less able to support biodiversity and deliver key ecosystem services. Wetland offsets provide a mechanism for dealing with this residual impact through the rehabilitation of other impacted wetlands, and also through protection of other high-quality wetland sites.

The Wetland offsets best practice guideline has been developed as a practical tool for the consistent application of wetland offsets in South Africa. It is primarily aimed at offsets required as part of the water use authorisation process where compensatory

actions are required to achieve water resource management and biodiversity conservation objectives.

Wetland rehabilitation in mining landscapes – An introductory guide

While remarkably resilient in many ways, wetlands are vulnerable to a range of direct, indirect and cumulative impacts. In mining landscapes changes in landscape hydrology and water quality often impact upon downstream water resources and associated users with various consequences for people and biodiversity.

The wetland rehabilitation guide is structured to provide users with the core principles that should inform planning and decision-making at different phases of wetland rehabilitation, namely planning, implementation, monitoring and long-term management phases. Key elements integral to wetland rehabilitation in each phase are summarised in easy-reference checklists.

An overview of legal considerations for wetland rehabilitation in the mining landscape is also provided. By consolidating existing guidance on wetland rehabilitation in mining landscapes, this guide promotes the standardised application of tools in rehabilitation and improves clarity with respect to wetland rehabilitation planning, design and implementation in mining landscapes.

Further reading:

To order the reports: *High risk wetland Atlas: Reference guide to the Mpumalanga mining decision support tool* (Report No. TT 659/16); *Wetland offsets: A best practice guideline for South Africa* (Report No. TT 660/16); *Wetland rehabilitation in mining landscapes: An introductory guide* (Report No. TT 658/16) contact Publications at Tel: (012) 330-0340; Email: orders@wrc.org.za or Visit: www.wrc.org.za to download free copies.