

Wetlands PROTECTED

Exxaro's Matla Colliery, operating at 100 m below surface, is situated beneath about 590 ha of wetlands and seasonal flood-plains. Golder Associates tells *Urban Green File* that "subsidence of these wetlands and changes to groundwater and surface-water flow were identified as two of the main impacts of the mining activities."

The need to keep the wetland functional, while managing the subsidence simultaneously as the area is mined, has been a priority for Matla Colliery. The presence of the wetland caused potential for an rush of water into the mine workings, which could pose not only a safety hazard but also potential water contamination.

In order to meet the requirements stipulated by the water-use license and the record of decision, a wetland monitoring and management plan (WMMP) was proposed by the Africa Ecology division of Golder Associates. The WMMP was, subsequently, initiated in early 2008; incorporating monitoring of the river as well as an 11 km-long diversion of the Rietspruit River. The Golder ecology team has also managed to reduce potential impacts on endangered small-scale yellow fish through the construction of fish ladders, gabions and pools to facilitate natural migration and breeding. *Urban*

Green File has learned. "The structures were constructed to enable fish migration. Endangered grass owls are being protected and encouraged back with responsible practice in areas that have been mined already.

"Ultimately, this has been an opportunity to change mining engineering and construction methodology and techniques to incorporate ecologically sound innovations. This project is a 10-year ground-breaking research project, which will generate ecological parameters and benchmarks for the shortwall mining methods of the future," claims Golder Associates.



Golder Associates



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Top: Matla's river diversion also has a unique trickle-flow valve system to feed the wetland.

Above: Approximately 590 ha of wetlands at Exxaro's Matla Colliery are being undermined.