



## Features

### IN PURSUIT OF SUSTAINABLE LAND MANAGEMENT – NOTES FROM THE FIELD: PLANNING FIELDWORK AROUND RAINY DAYS DURING A DROUGHT

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Autumn in the Nama Karoo is a bit like a second spring as many of the hardy Karoo shrubs make a final attempt at reproduction before the cold winter sets in. At this time of the year, temperatures start turning as the brutal summer sun eases its grip on the landscape. Fortunately, in 2018 this time of year also coincided with welcome rains.

The Karoo biome, covering more than 27% of South Africa, contains concerning levels of land degradation (Land Degradation Assessment in Drylands, 2012). Climate change will exacerbate existing droughts and natural disasters. This will place further stress on water resources, thus further limiting this natural resource upon which all biological, cultural and economic activity depends.

The riparian habitat, with its unique vegetation, is home to the Critically Endangered Riverine Rabbit. In addition, these highly productive catchment areas are a valuable resource to agriculture in the area, in terms of grazing for livestock and for the cultivation of livestock

feed and cropping purposes. Thus, healthy riparian systems are key resource areas in the landscape. Given the national importance of water catchments, the role of riparian areas, and the impact of climate change, the need to restore these critical areas to a resilient state is imperative.

With this in mind, and based on the fact that degradation in this landscape poses threats not only to biodiversity but also to livelihoods, The EWT's Drylands Conservation Programme (DCP) launched its Riparian Habitat Restoration Project in 2007. The objective was to look at different techniques to restore degraded riparian habitat along the seasonal rivers in the Nama Karoo.

The first step was to establish a Karoo Indigenous Plant Nursery to support restoration efforts by providing seedlings for planting. In 2009, three restoration sites were established. Since then, several additional sites have been established along the Sak- and Brak rivers, and one site along the Maanhaarspruit. Various different methodologies and techniques were trialled, and a Master's student-produced a dissertation looking at the effectiveness of micro-catchments in this particular habitat to promote seedling survival.

Erratic rainfall, prolonged droughts and heavy downpours are very much a natural part of this drylands landscape. These factors do however, make habitat restoration a particularly challenging undertaking. To compound matters, the nature of the riparian areas, with their deep, fine soil, which has a high clay content, make them particularly vulnerable to erosion, capping and compacting.

The prospect of further droughts has halted the establishment of any new sites for the near future. Establishing new plants on restoration sites in these drought conditions is simply not feasible. The drought has also had an impact on grazing systems, placing increasing pressure

on the productive riparian zones, as natural fodder continues to decrease as the current drought progresses.

This year the autumn rains were particularly soothing and welcome, boosting both veld- and livestock condition somewhat, following the failed spring and summer rains. We were patiently holding out for some rain to stimulate plant activity since spring last year, as we had an ecologist on standby to carry out evaluations of restoration techniques and associated veld.

Simon Todd, a drylands ecologist, finally got the “green light” to visit the Loxton area in mid-April. The veld was looking great following the rain.

Our first day out in the field literally started out with a “bang” as we were severely hampered by yet more rain in the form of a dramatic storm, with thunder, lightning and cloudbursts throughout the day.

These evaluations are the culmination of eight years of habitat restoration work carried out by the DCP team. We decided to have the restoration efforts evaluated externally to assess the effectiveness of the methodologies employed. We use the term restoration to describe our activities. Although damaged sites can never be completely restored it is possible to restore some functionality to the landscape.

This will help us to identify best practices in terms of restoration methodologies. It will also give us an objective opinion on progress on these sites. Once we understand the appropriateness and challenges associated with each technique, we will train farmers and other stakeholders and promote the use of highly effective techniques.

In addition, riparian habitat, as well as the veld adjacent to the riparian zones were evaluated on five farms, by carrying out cover and diversity assessments every 20m along 1km transects.

This work, both the restoration and the veld condition forms part of our work to promote sustainable land management in the Karoo, by identifying both best practice restoration, as well as veld management techniques. There are various grazing systems farmers can choose to apply, how they apply these systems varies greatly from farmer to farmer, depending on how local environmental and topographical

conditions, as well as size of farm etc.

The resilience of a farmer’s management system to adverse conditions is tested to its utmost during a drought such as the one we are experiencing. Addressing resilience and reducing negative impacts on the veld, which can take years to remedy following a drought, needs to be addressed well in advance so that a farms ability to bounce back after a drought is not impaired.

Access to early warning systems, as well as having a sound strategy for adapting the farming system to adverse conditions are critical components of any farm management plan.

Often the response to adverse conditions is a reactionary one and not pro-active one. Biodiversity conservation is inexorably linked to agriculture in the Nama Karoo, given that extensive farming of livestock in a largely intact landscape is the primary activity. Aligning agricultural and conservation priorities to achieve the common goal of sustainable land management in this vast landscape is the ultimate prize.

*The DCP recently embarked on a five-year project in partnership with the United Nations Development Programme and the Department of Environmental Affairs to promote sustainable land management (SLM) in the Nama Karoo. The project is funded by the Global Environmental Facility (GEF).*

*The project, entitled “Securing multiple ecosystems benefits through Sustainable Land Management in the productive but degraded landscapes of South Africa” also known as the Sustainable Land Management Project will be rolled out in three different geographic regions by three partners. The EWT will implement the project in the Northern Cape’s Nama Karoo.*

