

# Land Use Management

## FACT SHEET

### Introduction

Palabora is dedicated to the protection of the environment in which its activities are conducted. This is primarily in relation to requirements of the National Environmental Management Act, Minerals Petroleum and Resources Development Act and related legislation. We are particularly conscious of our proximity to the Kruger National Park (KNP) and its abundance of flora, fauna and cultural heritage in the area. Palabora therefore attempt to promote harmonious co-existence of people, industry, wildlife and cultural heritage through education, protection and responsible management.

### Land Use Management Scope

The Palabora Copper Environmental Management plan has specific requirements in relation to its land management with targets and objectives. This is inclusive of Biodiversity Management, Rehabilitation Strategies, Veld and Game Management, Cultural Heritage Management and Closure or Life of Mine Planning. These aspects need to be planned for and managed as part of the cost effective and sustainable use of natural resources being mined and processed at the operation. The nature of the operations at Palabora involves the use and reuse of large amounts of water on a daily basis. This has resulted in many water bodies on the property, which naturally attract a multitude of biodiversity, in particular during the drier months of the year between May and December. If not monitored and managed by the operation these aspects can have a negative cost and compliance impact on the operation.

Land Use Management also includes the related legislative requirements of auditing and licencing of related aspects, for such as removal of protected trees, compliance in removal of alien invasive plants or animals and updating or auditing of the Palabora Environmental Management Plan.

### Biodiversity Management

The management and monitoring of biodiversity is important to maintain an abundance of species to strengthen and restore biological systems for rehabilitation and closure plans. The monitoring of biodiversity gives an indication of how many species are available to assist with the reclamation of disturbed areas in the operation. Biodiversity monitoring can also help to detect adverse conditions for species, this is done by the use of indicator species that occur on the Palabora property to ensure that mitigation of impacts can be put in place or processes stopped before Biodiversity on the property or in the KNP are negatively affected.

The monitored strength of biodiversity also gives an indication of how fast ecosystem functions can recover after the closure plan strategy has been implemented. Biodiversity management is thus closely linked to the rehabilitation strategy.



## **Wildlife & Veld Management System**

Some of the bulk grazers that are present within Palabora are: elephants, hippos and buffalo. This increase places an increased demand for grazing material in the form of grass and bush foliage. Because of the open fence system on the southern end of the property, it is difficult to control the numbers of the bulk grazers during the drier months. This in turn often results in overgrazing and puts undue pressure on the vegetation this can also negatively affect rehabilitated areas.

It is therefore important to gathering data so that informed decisions can be made on how to manage the wildlife and indirectly the vegetation component. Information on the wildlife may be gathered on a daily real-time basis using electronic monitoring systems. Types of information gathered are sightings of animals, birds, reptiles, frogs, trees, alien plants, spoor, diseased animals, carcasses, presence of water, erosion, poaching, tourism and environmental incidents. Each of these aspects can be described in more detail, depending on the specific nature of the sighting. This information has assisted management in making decisions in the capture and relocation of either problem animals or where there are too many of a specie on site, i.e. elephant, buffalo and hippo.

An annual game census is conducted giving a total picture of animals present on the ground at that particular time. An ecological surveys as part of biodiversity monitoring is also done annually allowing the evaluation of the interaction of the wildlife with the vegetation. This allows for trend analysis to be done also taking climatic conditions into account. The vegetation parameters are compared with neighbouring reserves, estimates of food availability are made and a projection of herbivore biomass is made. A Wildlife Management section is responsible for the day to day aspects of Wildlife & Veld Management System.

The information of the game census inclusive of ecological survey data is used to calculate a stocking rate for herbivores and is compared to the actual numbers recorded. From this a management decision can be made as to whether any game relocation should take place or not, as well as probable impact on rehabilitated areas.



## **Cultural heritage**

The main objectives of the Cultural Heritage Management Plan are compliance in relation to National Heritage Resources Act (No 25 of 1999). The Palabora Environmental Management Plan indicates targets and objectives, as well as promotion of good relations with relevant communities and stakeholders inclusive of managing or maintaining the cultural resources as part of the national cultural heritage asset.

At least nine cultural heritage sites associated with metal working still exist whilst at least three of the original twelve sites have disappeared. Settlements which still exist are therefore inevitably part of the Palabora environmental and heritage management programs



## **Mine Closure**

Out of a Land use Management point of view concurrent rehabilitation of disturbed areas plays an important role in the cost effective planning for the end of the life of the operation. Effective mine closure planning closely relates to effective or cost effective mining at an operation. By managing land use as the mine changes a more cost effective and sustainable operation is ensured focussing on reducing environmental liabilities for Palabora. Consequently, the aim of the Land Use Management is to, where possible, expand the focus of mine closure planning from a mere financial provisioning for rehabilitation and physical closure to planning for sustainability beyond mine closure and leaving a positive legacy behind

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