

PLANT RESCUE AND PROTECTION PLAN

1. PURPOSE

The purpose of the plant rescue and protection plan is to implement avoidance and mitigation measures, in addition to the mitigations included in the Environmental Management Programme (EMPr) to reduce the impact of the development of the PV Facility on listed and protected plant species and their habitats and to provide guidance on search and rescue of species of conservation concern.

2. RELEVANT ASPECTS OF THE SITE

The selected study area falls within the original extent of the Soweto Highveld Grassland (Unit Gm8) as defined by Mucina and Rutherford (2006), consisting of gently to moderately undulating landscapes. The short to medium high dense tussock grassland is dominated almost entirely by *Themeda triandra*, with a relatively high diversity of grasses, herbs and geophytes (Mucina and Rutherford 2006). Many of the herbs resprout every year from below-ground storage tubers, usually early in the growing season before the grasses reach their full cover.

A total of 973 indigenous plant species have been recorded in the Tutuka Area according to the SANBI database. Only 120 indigenous species could be confirmed on site present. A large portion of the study site is disturbed or has been transformed in the past, allowing many alien invasives to become established, with 25 alien invasive species recorded.

The following red data species have been recorded from the area (2827) according to the red data species list of SANBI and the ADU database:

Species	RD Status	Suitable Habitat	Possibility of being present	Threat
<i>Plants</i>				
<i>Aloe cooperi</i> subsp. <i>cooperi</i>	Declining	Grasslands	Slight	Habitat destruction
<i>Aspidoglossum xanthosphaerum</i>	VU	Grasslands	Slight	Medicinal trade
<i>Frithia humilis</i>	EN	Rocky outcrops	Unlikely	Habitat destruction
<i>Khadia carolinensis</i>	VU	Rocky outcrops	Unlikely	Habitat destruction
<i>Miraglossum davyi</i>	VU	High altitude grasslands	Unlikely	Habitat destruction

<i>Pachycarpus suaveolens</i>	VU	High altitude grasslands	Unlikely	Habitat destruction
<i>Acalypha caperonioides</i> var. <i>caperonioides</i>	DDT	Grasslands	Slight	Habitat destruction
<i>Asparagus fractiflexus</i>	EN	High altitude grasslands	Unlikely	Medicinal trade
<i>Cineraria austrotransvaalensis</i>	NT	High altitude grasslands	Unlikely	Habitat destruction
<i>Rapanea melanophloeos</i>	Declining	Riparian areas	Unlikely	Habitat destruction
<i>Alepidea peduncularis</i>	DDT	High altitude grasslands	Unlikely	Habitat destruction
<i>Argyrolobium campicola</i>	NT	High altitude grasslands	Unlikely	Habitat destruction
<i>Gunnera perpensa</i>	Declining	Wetlands	Unlikely	Habitat destruction
<i>Kniphofia typhoides</i>	NT	Wetlands	Unlikely	Habitat destruction
<i>Boophone disticha</i>	Declining	Variable habitats	Observed	Medicinal Trade
<i>Crinum bulbispermum</i>	Declining	Grasslands and wetlands	Slight	Habitat destruction
<i>Drimia elata</i>	DDT	Variable habitats	Slight	Medicinal Trade
<i>Eucomis montana</i>	Declining	High altitude grasslands	Unlikely	Habitat destruction
<i>Gladiolus robertsoniae</i>	NT	Dolerite outcrops	Unlikely	Habitat destruction
<i>Habenaria barbertoni</i>	NT	Rocky hillsides	Not expected	Habitat destruction
<i>Hesperantha rupestris</i>	DDD	Rocky areas or wetlands	Unlikely	Habitat destruction
<i>Hypoxis hemerocallidea</i>	Declining	Variable	Slight	Medicinal Trade
<i>Merwillia plumbea</i>	NT	Rocky hillsides	Not expected	Medicinal Trade
<i>Nerine gracilis</i>	VU	Grassland	Slight	Habitat destruction
<i>Stenostelma umbelluliferum</i>	NT	Riparian areas	Not expected	Habitat destruction
<i>Trachyandra erythrorrhiza</i>	NT	Black turf marshes	Not expected	Habitat destruction

The following plants encountered on the study site are protected:

Mpumalanga Nature Conservation Act (Act 10 of 1998):

- » *Aloe ecklonis*
- » *Boophane disticha*

- » *Corycium nigrescens*
- » *Eulophia hians*
- » *Eulophia leontoglossa*
- » *Eulophia ovalis*
- » *Gladiolus crassifolius*
- » *Gladiolus permeabilis*

3. PRINCIPLES FOR SEARCH AND RESCUE

Successful plant rescue can only be achieved if:

- » Species can be removed from their original habitat with minimal damage to the plant, especially the roots.
- » All plants removed are safely stored and treated according to their specific requirements prior to being transplanted again.
- » They are relocated into a suitable habitat and protected from further damage and all disturbances to aid their re-establishment.
- » Timing of planting activities is planned with the onset of the growing season.
- » Steps are taken where necessary to aid the initial establishment of vegetation, including occasional watering.

The following principles apply in terms of plant rescue and protection:

- » A permit is required from the Mpumalanga Department of Economic Development, Environment and Tourism to translocate or destroy any listed and protected species identified by the ecological walkthrough survey undertaken for the optimised final Tutuka PV Facility layout, even if they do not leave the property. This permit should be obtained prior to any search and rescue operations being undertaken.
- » Where suitable species are identified, a search and rescue operation of these species should be undertaken within the development footprint, where these species would be affected, and prior to the commencement of construction.
- » As far as possible, timing of search and rescue activities should be planned with the onset of the growing season.
- » Affected individuals should be translocated to a similar habitat outside of the development footprint and marked and recorded for monitoring purposes. For each individual plant that is rescued, the plant must be photographed before removal, tagged with a unique number or code and a latitude longitude position recorded using a hand-held GPS device.
- » The rescued plants must be planted into a container to be housed within a temporary nursery on site or immediately planted into the target habitat.
- » Rescued plants, if re-planted back in the wild, should be placed as close as possible to where they were originally removed. Re-planting into the wild

must cause as little disturbance as possible to existing natural ecosystems. The position of the rescued individual/s must be recorded to aid in future monitoring of that plant as noted earlier.

- » During construction, the Environmental Control Officer (ECO)/ Contractor's Environmental Officer (EO)/ Environmental Representative must monitor vegetation clearing at the site. Any deviations from the plans that may be required should first be checked for listed species by the Environmental Control Officer (ECO)/ Contractor's Environmental Officer (EO/ SHE Representative) and any listed species present which are able to survive translocation should be translocated to a safe site.
- » Any listed species suitable for translocation observed within the development footprint, and that would be affected, that were not previously observed be translocated to a safe site.
- » The collecting of plants or their parts should be strictly forbidden. Staff should be informed of the legal and conservation aspects of harvesting plants from the wild as part of the environmental induction training.
- » Sensitive habitats and area outside project development should be clearly demarcated as no go areas during the construction and operational phase to avoid accidental impacts.