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 mitigation measures included in the Environmental Management Programme (EMPr) to reduce the impact of the development of the Gunstfontein Wind Energy 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

According to the SANBI SIBIS database, 519 plant species have been recorded from the two quarter degree squares 3220 DB and DA (Table 3). This includes 6 species of high conservation concern and 14 species of moderate conservation concern. Several listed species were observed at the site including *Brunsvigia josephinae, Eriocephalus grandiflorus, Adromischus phillipsiae, Lachenalia congesta, Delosperma sphalmanthoides, Cliffortia arborea and Romulea komsbergensis*. Areas of high listed species density include the low-lying areas on sandy soils along drainage lines, gravel outcrops and rock pavements especially along the escarpment.

Red data species identified during the walk-through survey of the final layout (Table 1) include *Antimima* ivory, now listed as Rare, and *Lachenalia congesta*, also listed as Rare.

All other protected plant species, (protected in terms of the Northern Cape Nature Conservation Act (No. 9 of 2009) legislation) are listed in Table 1 below. The disturbance, destruction and/or relocation, whichever is more relevant, of these species would require the relevant permits from the provincial authority, noting that the majority of the species listed below were found outside of the June 2021 project layout.

Table 1: List of potential listed and protected plants, and if they had been observed during past and present surveys within the project footprint

Family	Genus	Species	Sub-species	IUCN Status	2016 Survey	2020 & 2021 Survey	NCNCA (No 9 of 2009) Observed
AIZOACEAE	*Aloinopsis*	*spathulata*	-	LC	X	X	X
AIZOACEAE	***Antimima***	***ivori***	-	**Rare**	-	X	X
AIZOACEAE	*Antimima*	*prolongata*	-	LC	-	X	X
AIZOACEAE	*Antimima*	*pumila*	-	DDT	-	X	X
AIZOACEAE	*Cheiridopsis*	*namaquensis*	-	LC	-	X	X
AIZOACEAE	*Hammeria*	*meleagris*	-	LC	X	X	X
AIZOACEAE	*Lampranthus*	*spp*	-	LC	-	X	X
AIZOACEAE	*Ruschia*	*caroli*	-	LC	-	X	X
AIZOACEAE	*Ruschia*	*pungens*	-	DDT	-	X	X
AIZOACEAE	Stomatium	suaveolens	-	LC	-	X	X
AMARYLLIDACEAE	*Boophone*	*disticha*	-	Declining	-	-	-
AMARYLLIDACEAE	*Brunsvigia*	*josephinae*	-	VU	-	-	-

Family	Genus	Species	Sub-species	IUCN Status	2016 Survey	2020 & 2021 Survey	NCNCA (No 9 of 2009) Observed
AMARYLLIDACEAE	*Strumaria*	*karooica*	-	Rare		-	X
ANACAMPSEROTACEAE	*Anacampseros*	*marlothii*	-	LC	-	X	X
APOCYNACEAE	*Hoodia*	*gordonii*	-	DDD	-	-	-
APOCYNACEAE	*Hoodia*	*pilifera*	*pillansii*	DDT	-	-	-
ASPARAGACEAE	*Asparagus*	*capensis*	-	LC	-	X	X
ASPHODELACEAE	*Aloe*	*microstigma*	-	LC	-	X	X
ASPHODELACEAE	*Bulbine*	*torta*	-	Rare	-	-	-
ASTERACEAE	*Cotula*	*coronopifolia*	-	LC	X	X	X
ASTERACEAE	*Dimorphotheca*	*cuneata*	-	LC	X	X	X
ASTERACEAE	*Elytropappus*	*rhinocerotis*	-	LC	X	X	X
ASTERACEAE	*Eriocephalus*	*grandiflorus*	-	Rare	-	-	-
ASTERACEAE	*Eriocephalus*	*ericoides*	-	LC	-	X	X
ASTERACEAE	*Euryops*	*marlothii*	-	Rare	-	-	-
ASTERACEAE	*Euryops*	*petraeus*	-	Rare	-	-	-
ASTERACEAE	*Euryops*	*lateriflorus*	-	LC	-	X	X
ASTERACEAE	*Felicia*	*filifolia*	-	LC	X	X	X
ASTERACEAE	*Gnaphalium*	*declinatum*	-	NT	-	-	-
ASTERACEAE	*Petronia*	*glomerata*	-	LC	-	X	X
ASTERACEAE	*Phymaspermum*	*schroeteri*	-	Rare	-	-	-
ASTERACEAE	*Rosenia*	*oppositifolia*	-	LC	-	X	X
COLCHICACEAE	*Colchicum*	*coloratum*	burchellii	LC	-	-	-
CRASSULACEAE	*Adromischus*	*humilis*	-	Rare	-	-	-
CRASSULACEAE	*Adromischus*	*phillipsiae*	-	Rare		-	X
CRASSULACEAE	*Crassula*	*roggeveldii*	-	Rare	-	-	-
CRASSULACEAE	*Crassula*	*rupestris*	*commutata*	Rare	-	-	-
CRASSULACEAE	*Crassula*	*corallina*	*macrorrhiza*	LC	-	X	X
CRASSULACEAE	*Tylecodon*	*paniculatus*	-	LC	-	X	X
EBENACEAE	*Diospyros*	*austro-africana*	-	LC	X	X	X
ERICACEAE	*Erica*	*caffrorum*	*glomerata*	DDT	-	-	-
EUPHORBIACEAE	*Euphorbia*	*mauritanica*	-	LC	-	X	X
EUPHORBIACEAE	*Euphorbia*	*multifolia*	-	LC	-	X	X
HYACINTHACEAE	*Drimia*	*capensis*	-	-	-	X	X
HYACINTHACEAE	*Lachenalia*	*congesta*	-	Rare	X	X	X
IRIDACEAE	*Babiana*	*crispa*	-	LC	-	X	X
IRIDACEAE	*Ixia*	*brevituba*	-	Rare	-	-	-

Family	Genus	Species	Sub-species	IUCN Status	2016 Survey	2020 & 2021 Survey	NCNCA (No 9 of 2009) Observed
IRIDACEAE	*Ixia*	*trifolia*	-	-	X	X	X
IRIDACEAE	*Moraea*	*contorta*	-	Rare			X
IRIDACEAE	*Moraea*	*Miniate*		LC		X	X
IRIDACEAE	*Romulea*	*komsbergensis*	-	NT	-	-	-
IRIDACEAE	*Romulea*	*subfistulosa*	-	NT	-	-	-
IRIDACEAE	*Romulea*	*multifida*	-	VU	-	-	-
IRIDACEAE	*Romulea*	*syringodeoflora*	-	VU	-	-	-
MESEMBRYANTHEMACEAE	*Delosperma*	*sphalmanthoides*	-	DDT	X	X	X
MESEMBRYANTHEMACEAE	*Drosanthemum*	*spp*	-	LC	-	X	X
MESEMBRYANTHEMACEAE	*Ruschia*	*inclusa*	-	DDT	-	-	-
POACEAE	*Helictotrichon*	*namaquense*	-	VU	-	-	-
PROTEACEAE	*Protea*	*venusta*	-	EN	-	-	-
ROSACEAE	*Cliffortia*	*arborea*	-	VU	-	-	-
SANTALACEAE	*Thesium*	*marlothii*	-	DDT	-	-	-
SCROPHULARIACEAE	*Manulea*	*incana*	-	DDD	-	-	-
SCROPHULARIACEAE	*Selago*	*articulata*	-	LC	X	X	X

Where LC = Least Concern, DDD = Data Deficient - Insufficient Information, DDT = Data Deficient - Insufficient Information, VU = Venerable & EN = Endangered.

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 Northern Cape Department Agriculture, Environmental Affairs, Rural Development and Land Reform (DAEARD&LR) to translocate or destroy any listed and protected

species, 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 (follow up clearance may be required for re-growth throughout the project construction period).
- As far as possible, timing of search and rescue activities should be planned with the onset of the growing season for applicable species.
- 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, plants 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)/ Environmental Officer (EO) 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 ECO/EO 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 but were not previously observed, should also be translocated to a safe site.
- The collecting of plants or their parts should be strictly forbidden (as per the mitigations included in the EMPr). Staff should be informed of the legal and conservation aspects of harvesting plants from the wild as part of the environmental induction training as per the mitigations including the EMPr.
- Sensitive habitats and areas outside of the project development area should be clearly demarcated as no go areas during the construction and operational phase to avoid accidental impacts.