

PLANT RESCUE AND PROTECTION PLAN

1. PURPOSE

The purpose of the Geelstert 1 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 solar facility and associated infrastructure on listed and protected plant species and their habitats during construction and operation. This subplan is required in order to ensure compliance with national and provincial legislation for vegetation clearing and any required destruction or translocation of provincially and nationally protected species within the footprint of the development.

The Plan first provides some legislative background on the regulations relevant to listed and protected species, under the Northern Cape Conservation Act (2009) and trees protected under the National List of Protected Tree Species. This is followed by an identification of protected species present within the Geelstert 1 development footprint and actions that should be implemented to minimise impact on these species and comply with legislative requirements.

2. IDENTIFICATION OF SPECIES OF CONSERVATION CONCERN

Plant species are protected at the national level as well as the provincial level and different permits may be required for different species depending on their protection level. At the national level, protected trees are listed by DEFF under the National List of Protected Trees, which is updated on a regular basis. Any clearing of nationally protected trees requires a permit from DAFF. At the provincial level, all species red-listed under the Red List of South African plants (<http://redlist.sanbi.org/>) as well as species listed under the Northern Cape Nature Conservation Act (No. 9 of 2009) are protected and require provincial permits. The Northern Cape Conservation Act lists a variety of species as protected but also several whole families and genera as protected. Of particular relevance to the current study are the following, which are extracted from the legislation and are not intended to provide a comprehensive list of all protected species, only those which are likely to be encountered in the area. The reader is referred to the schedules of the Act for a full list of species listed under the act.

Under the Northern Cape Nature Conservation Act (No. 9 of 2009), the following are highlighted as potentially being present around the surrounding area.

Schedule 2 Protected Flora

- Family AIZOACACEAE – *Conophytum ficiforme* and *Lithops julii* subsp. *fulleri*
- Family CAPPARACEAE – *Boscia foetida* subsp. *foetida*
- Family APOCYNACEAE – *Hoodia gordonii*

A full list of plant species known from the study area around the Geelstert 1 development footprint is provided in Annex 1.

3. IDENTIFICATION OF LISTED SPECIES

In this section, the listed species observed to occur within the broader area are identified and listed below. Those present and the number affected within the development footprint would be clarified following the preconstruction walk-through. The list is not considered exhaustive and additional species may be observed to be present during the pre-construction walk-through, which should be conducted at a favourable time of the year, such that there is a maximal chance of picking up geophytes and other species which may not be easily observed at other times of the year.

Family	Species	IUCN Status	NC Status
CAPPARACEAE	<i>Boscia foetida</i> subsp. <i>foetida</i>	LC	Schedule 2
APOCYNACEAE	<i>Hoodia gordonii</i>	LC	Schedule 2
AZOACEAE	<i>Lithops julii</i> subsp. <i>fulleri</i>	LC	Schedule 2
AIZOACEAE	<i>Conophytum ficiforme</i>	LC	Schedule 2

4. MITIGATION & AVOIDANCE OPTIONS

The primary mitigation and avoidance measure that must be implemented at the pre-construction phase is the Pre-construction Walk-Through of the development footprint. This defines which and how many individuals of listed and protected species are found within the development footprint. This information is required for the DEFF and Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform permits which must be obtained before construction can commence.

Where listed plant species fall within the development footprint and avoidance is not possible, then it may be possible to translocate the affected individuals outside of the development footprint. However, not all species are suitable for translocation as only certain types of plants are able to survive the disturbance. Suitable candidates for translocation include most geophytes and succulents. Although there are exceptions, the majority of woody species do not survive translocation well and it is generally not recommended to try and attempt to translocate such species. Recommendations in this regard would be made following the walk-through of the facility development footprint before construction, where all listed and protected species within the development footprint will be identified and located.

5. RESCUE AND PROTECTION PLAN

5.1. Pre-construction

- » Identification of all listed species which may occur within the site, based on the SANBI POSA database as well as the specialist EIA studies for the site and any other relevant literature.
- » Before construction commences at the site, the following actions should be taken:
 - A walk-through of the final development footprint by a suitably qualified botanist/ecologist to locate and identify all listed and protected species which fall within the development footprint. This should happen during the flowering season at the site which, depending on rainfall, is likely to be during spring to early summer (August-October).
 - A walk-through report following the walk-through which identifies areas where minor deviations to roads and other infrastructure can be made to avoid sensitive areas and important populations of listed species. The report should also contain a full list of localities where listed species occur within

the development footprint and the number of affected individuals in each instance, so that this information can be used to comply with the permit conditions required by the relevant legislation. Those species suitable for search and rescue should be identified in the walk-through report.

- A permit to clear the site and relocate species of concern is required from Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform before construction commences. A tree clearing permit is also required from DEFF to clear protected trees from the site.
- Once the permits have been issued, there should be a search and rescue operation of all listed species that cannot be avoided, which have been identified in the walk-through report as being suitable for search and rescue within the development footprint. Affected individuals should be translocated to a similar habitat outside of the development footprint and marked for monitoring purposes.

5.2. Construction

- » Vegetation clearing should take place in a phased manner, so that large cleared areas are not left standing with no activity for long periods of time and pose a wind and water erosion risk. This will require coordination between the contractor and EO, to ensure that the EO is able to monitor activities appropriately.
- » All cleared material must be handled according to the Revegetation and Rehabilitation Plan and used to encourage the recovery of disturbed areas.
- » EO to monitor vegetation clearing at the site. Any deviations from the plans that may be required should first be checked for listed species by the EO and any listed species present which are able to survive translocation should be translocated to a safe site.
- » All areas to be cleared should be demarcated with construction tape, survey markers or similar. All construction vehicles should work only within the designated area.
- » Plants suitable for translocation or for use in rehabilitation of already cleared areas should be identified and relocated before general clearing takes place.
- » Any listed species observed within the development footprint that were missed during the pre-construction plant sweeps must be translocated to a safe site before clearing commences.
- » Many listed species are also sought after for traditional medicine or by collectors and so the EO and ECO must ensure that all staff attend environmental induction training in which the legal and conservation aspects of harvesting plants from the wild are discussed.
- » The EO must monitor construction activities in sensitive habitats such as in dune areas carefully to ensure that impacts to these areas are minimised.

5.3. Operation

- » Access to the site should be strictly controlled and all personnel entering or leaving the site must be required to sign in and out with the security officers.
- » The collecting of plants or their parts must be strictly forbidden and signs stating so must be placed at the entrance gates to the site.

6. MONITORING AND REPORTING REQUIREMENTS

The following reporting and monitoring requirements are recommended as part of the plant rescue and protection plan:

- » Pre-construction walk-through report detailing the location and distribution of all listed and protected species. This must include a walk-through of all infrastructure including all new access roads, cables, buildings and the substation. The report must include recommendations of route adjustments where necessary, as well as provide a full account of how many individuals of each listed species will be impacted by the development. Details of plants suitable for search and rescue must also be included.
- » Permit applications to NC-DAEARD&LR and DEFF. This requires the walk-through report as well as the identification and quantification of all listed and protected species within the development footprint. The permit is required before any search and rescue or vegetation clearance can take place. Where large numbers of listed species are affected, a site inspection and additional requirements may be imposed by NC-DAEARD&LR and/or DEFF as part of the permit conditions. All documentation associated with this process needs to be retained and the final clearing permit must be kept at the site.
- » Active daily monitoring of clearing during construction by the EO to ensure that listed species and sensitive habitats are avoided. All incidents must be recorded along with the remedial measures implemented.
- » Post-construction monitoring of plants translocated during search and rescue to evaluate the success of the intervention. Monitoring for a year post-transplant should be sufficient to gauge success.

ANNEX 1. LIST OF PLANT SPECIES

List of plant species known from the broad area around the Geelstert 1 development footprint, based on observations from the site as well as the SANBI SIBIS database.

Family	Species
ACANTHACEAE	<i>Acanthopsis disperma</i>
ACANTHACEAE	<i>Acanthopsis hoffmannseggiana</i>
ACANTHACEAE	<i>Barleria lichtensteiniana</i>
ACANTHACEAE	<i>Barleria rigida</i>
ACANTHACEAE	<i>Blepharis mitrata</i>
ACANTHACEAE	<i>Monechma genistifolium</i> subsp. <i>australe</i>
ACANTHACEAE	<i>Monechma genistifolium</i> subsp. <i>genistifolium</i>
ACANTHACEAE	<i>Monechma incanum</i>
ACANTHACEAE	<i>Monechma spartioides</i>
AIZOACEAE	<i>Aizoon asbestinum</i>
AIZOACEAE	<i>Aizoon schellenbergii</i>
AIZOACEAE	<i>Galenia africana</i>
AIZOACEAE	<i>Galenia crystallina</i>
AIZOACEAE	<i>Galenia sarcophylla</i>
AIZOACEAE	<i>Plinthus cryptocarpus</i>
AIZOACEAE	<i>Plinthus karooicus</i>
AIZOACEAE	<i>Plinthus sericeus</i>
AIZOACEAE	<i>Tetragonia arbuscula</i>
AIZOACEAE	<i>Tetragonia reduplicata</i>
AIZOACEAE	<i>Trianthema parvifolia</i> var. <i>parvifolia</i>
AMARANTHACEAE	<i>Amaranthus praetermissus</i>
AMARANTHACEAE	<i>Amaranthus thunbergii</i>
AMARANTHACEAE	<i>Leucosphaera bainesii</i>
AMARANTHACEAE	<i>Sericocoma avolans</i>
AMARANTHACEAE	<i>Sericocoma pungens</i>
AMARYLLIDACEAE	<i>Boophone disticha</i>
AMARYLLIDACEAE	<i>Crinum bulbispermum</i>
AMARYLLIDACEAE	<i>Haemanthus humilis</i> subsp. <i>humilis</i>
AMARYLLIDACEAE	<i>Nerine laticoma</i>
ANACARDIACEAE	<i>Searsia lancea</i>
ANACARDIACEAE	<i>Searsia pendulina</i>
APOCYNACEAE	<i>Adenium oleifolium</i>
APOCYNACEAE	<i>Cynanchum orangeanum</i>
APOCYNACEAE	<i>Gomphocarpus fruticosus</i> subsp. <i>fruticosus</i>
APOCYNACEAE	<i>Hoodia gordonii</i>
APOCYNACEAE	<i>Larryleachia marlothii</i>
APOCYNACEAE	<i>Sarcostemma viminale</i> subsp. <i>viminale</i>
APOCYNACEAE	<i>Tridentea marientalensis</i> subsp. <i>marientalensis</i>
ASPARAGACEAE	<i>Asparagus denudatus</i>
ASPARAGACEAE	<i>Asparagus pearsonii</i>
ASPHODELACEAE	<i>Aloe claviflora</i>
ASPHODELACEAE	<i>Aloe dichotoma</i>
ASPHODELACEAE	<i>Aloe gariensis</i>
ASPHODELACEAE	<i>Aloe hereroensis</i> var. <i>hereroensis</i>

Family	Species
ASTERACEAE	<i>Amellus tridactylus</i> subsp. <i>arenarius</i>
ASTERACEAE	<i>Arctotis leiocarpa</i>
ASTERACEAE	<i>Berkheya annectens</i>
ASTERACEAE	<i>Berkheya spinosissima</i> subsp. <i>namaensis</i> var. <i>namaensis</i>
ASTERACEAE	<i>Berkheya spinosissima</i> subsp. <i>spinosissima</i>
ASTERACEAE	<i>Bidens bipinnata</i>
ASTERACEAE	<i>Dicoma capensis</i>
ASTERACEAE	<i>Dimorphotheca polyptera</i>
ASTERACEAE	<i>Eriocephalus ambiguus</i>
ASTERACEAE	<i>Eriocephalus microphyllus</i> var. <i>pubescens</i>
ASTERACEAE	<i>Felicia deserti</i>
ASTERACEAE	<i>Felicia muricata</i> subsp. <i>cinerascens</i>
ASTERACEAE	<i>Felicia muricata</i> subsp. <i>muricata</i>
ASTERACEAE	<i>Geigeria filifolia</i>
ASTERACEAE	<i>Geigeria ornativa</i>
ASTERACEAE	<i>Geigeria pectidea</i>
ASTERACEAE	<i>Helichrysum gariepinum</i>
ASTERACEAE	<i>Helichrysum micropoides</i>
ASTERACEAE	<i>Hirpicium echinus</i>
ASTERACEAE	<i>Ifloga molluginoides</i>
ASTERACEAE	<i>Kleinia longiflora</i>
ASTERACEAE	<i>Laggera decurrens</i>
ASTERACEAE	<i>Leysera tenella</i>
ASTERACEAE	<i>Litogyne gariepina</i>
ASTERACEAE	<i>Nolletia arenosa</i>
ASTERACEAE	<i>Osteospermum microcarpum</i> subsp. <i>microcarpum</i>
ASTERACEAE	<i>Pegolettia retrofracta</i>
ASTERACEAE	<i>Pentzia pinnatisecta</i>
ASTERACEAE	<i>Pentzia</i> sp.
ASTERACEAE	<i>Pentzia spinescens</i>
ASTERACEAE	<i>Pteronia leucoclada</i>
ASTERACEAE	<i>Pteronia mucronata</i>
ASTERACEAE	<i>Pteronia unguiculata</i>
ASTERACEAE	<i>Rosenia oppositifolia</i>
ASTERACEAE	<i>Senecio consanguineus</i>
ASTERACEAE	<i>Senecio glutinarius</i>
ASTERACEAE	<i>Tripteris microcarpa</i> subsp. <i>microcarpa</i>
ASTERACEAE	<i>Verbesina encelioides</i> var. <i>encelioides</i>
AZOLLACEAE	<i>Azolla filiculoides</i>
BIGNONIACEAE	<i>Rhigozum obovatum</i>
BIGNONIACEAE	<i>Rhigozum trichotomum</i>
BORAGINACEAE	<i>Codon royenii</i>
BORAGINACEAE	<i>Ehretia rigida</i> subsp. <i>rigida</i>
BRASSICACEAE	<i>Heliophila carnosa</i>
BRASSICACEAE	<i>Heliophila minima</i>
BRASSICACEAE	<i>Heliophila</i> sp.
BRASSICACEAE	<i>Heliophila trifurca</i>
BRASSICACEAE	<i>Sisymbrium burchellii</i> var. <i>burchellii</i>
BURSERACEAE	<i>Commiphora gracilifrons</i>

Family	Species
CAMPANULACEAE	<i>Wahlenbergia denticulata</i> var. <i>denticulata</i>
CAPPARACEAE	<i>Boscia foetida</i> subsp. <i>foetida</i>
CAPPARACEAE	<i>Boscia albitrunca</i>
CAPPARACEAE	<i>Cadaba aphylla</i>
CAPPARACEAE	<i>Cleome angustifolia</i> subsp. <i>diandra</i>
CAPPARACEAE	<i>Cleome gynandra</i>
CARYOPHYLLACEAE	<i>Pollichia campestris</i>
CELASTRACEAE	<i>Gymnosporia linearis</i> subsp. <i>lanceolata</i>
CHENOPODIACEAE	<i>Atriplex semibaccata</i> var. <i>appendiculata</i>
CHENOPODIACEAE	<i>Atriplex semibaccata</i> var. <i>typica</i>
CHENOPODIACEAE	<i>Chenopodium glaucum</i>
CHENOPODIACEAE	<i>Salsola barbata</i>
CHENOPODIACEAE	<i>Salsola glabrescens</i>
CHENOPODIACEAE	<i>Salsola kali</i>
CHENOPODIACEAE	<i>Salsola namibica</i>
CHENOPODIACEAE	<i>Salsola rabieana</i>
CHENOPODIACEAE	<i>Salsola tuberculata</i>
CHENOPODIACEAE	<i>Suaeda caespitosa</i>
CHENOPODIACEAE	<i>Suaeda merxmulleri</i>
COLCHICACEAE	<i>Androcymbium melanthioides</i> subsp. <i>melanthioides</i>
COLCHICACEAE	<i>Colchicum melanthoides</i> subsp. <i>melanthoides</i>
COLCHICACEAE	<i>Ornithoglossum vulgare</i>
CONVOLVULACEAE	<i>Convolvulus sagittatus</i>
CRASSULACEAE	<i>Adromischus</i> sp.
CRASSULACEAE	<i>Cotyledon orbiculata</i> var. <i>dactylopsis</i>
CRASSULACEAE	<i>Crassula muscosa</i> var. <i>muscosa</i>
CUCURBITACEAE	<i>Coccinia rehmannii</i>
CUCURBITACEAE	<i>Cucumis africanus</i>
CUCURBITACEAE	<i>Kedrostis capensis</i>
CYPERACEAE	<i>Bulbostylis hispidula</i>
CYPERACEAE	<i>Cyperus capensis</i>
CYPERACEAE	<i>Cyperus fulgens</i> var. <i>contractus</i>
CYPERACEAE	<i>Cyperus longus</i> var. <i>tenuiflorus</i>
CYPERACEAE	<i>Cyperus marginatus</i>
CYPERACEAE	<i>Cyperus usitatus</i>
CYPERACEAE	<i>Scirpoides dioecus</i>
ERIOSPERMACEAE	<i>Eriospermum bakerianum</i> subsp. <i>bakerianum</i>
EUPHORBIACEAE	<i>Euphorbia glanduligera</i>
EUPHORBIACEAE	<i>Euphorbia inaequilatera</i> var. <i>inaequilatera</i>
EUPHORBIACEAE	<i>Euphorbia rudis</i>
EUPHORBIACEAE	<i>Euphorbia spinea</i>
FABACEAE	<i>Acacia erioloba</i>
FABACEAE	<i>Acacia karroo</i>
FABACEAE	<i>Acacia mellifera</i> subsp. <i>detinens</i>
FABACEAE	<i>Acacia pendula</i>
FABACEAE	<i>Adenolobus garipensis</i>
FABACEAE	<i>Cullen tomentosum</i>
FABACEAE	<i>Cyamopsis serrata</i>
FABACEAE	<i>Hoffmannseggia lactea</i>

Family	Species
FABACEAE	<i>Indigastrum argyraeum</i>
FABACEAE	<i>Indigofera alternans</i> var. <i>alternans</i>
FABACEAE	<i>Indigofera auricoma</i>
FABACEAE	<i>Indigofera heterotricha</i>
FABACEAE	<i>Indigofera pungens</i>
FABACEAE	<i>Indigofera rhytidocarpa</i> subsp. <i>rhytidocarpa</i>
FABACEAE	<i>Lebeckia spinescens</i>
FABACEAE	<i>Lotononis platycarpa</i>
FABACEAE	<i>Lotononis rabenaviiana</i>
FABACEAE	<i>Melolobium candicans</i>
FABACEAE	<i>Melolobium macrocalyx</i>
FABACEAE	<i>Parkinsonia africana</i>
FABACEAE	<i>Prosopis chilensis</i>
FABACEAE	<i>Prosopis glandulosa</i> var. <i>glandulosa</i>
FABACEAE	<i>Prosopis glandulosa</i> var. <i>torreyana</i>
FABACEAE	<i>Prosopis</i> sp.
FABACEAE	<i>Prosopis velutina</i>
FABACEAE	<i>Ptycholobium biflorum</i> subsp. <i>biflorum</i>
FABACEAE	<i>Requienia sphaerosperma</i>
FABACEAE	<i>Senna italica</i> subsp. <i>arachoides</i>
FABACEAE	<i>Tephrosia burchellii</i>
FABACEAE	<i>Tephrosia dregeana</i> var. <i>dregeana</i>
GERANIACEAE	<i>Monsonia burkeana</i>
GERANIACEAE	<i>Monsonia luederitziana</i>
GERANIACEAE	<i>Sarcocaulon patersonii</i>
GISEKIACEAE	<i>Gisekia africana</i> var. <i>africana</i>
GISEKIACEAE	<i>Gisekia pharnacioides</i> var. <i>pharnacioides</i>
HYACINTHACEAE	<i>Dipcadi ciliare</i>
HYACINTHACEAE	<i>Dipcadi glaucum</i>
HYACINTHACEAE	<i>Dipcadi gracillimum</i>
HYACINTHACEAE	<i>Dipcadi papillatum</i>
HYACINTHACEAE	<i>Drimia intricata</i>
HYACINTHACEAE	<i>Drimia physodes</i>
HYACINTHACEAE	<i>Ledebouria</i> sp.
HYACINTHACEAE	<i>Ledebouria undulata</i>
HYACINTHACEAE	<i>Ornithogalum suaveolens</i>
HYACINTHACEAE	<i>Ornithogalum tenuifolium</i> subsp. <i>aridum</i>
HYACINTHACEAE	<i>Ornithogalum tenuifolium</i> subsp. <i>tenuifolium</i>
IRIDACEAE	<i>Ferraria variabilis</i>
IRIDACEAE	<i>Gladiolus saccatus</i>
IRIDACEAE	<i>Moraea polystachya</i>
LAMIACEAE	<i>Leucas capensis</i>
LAMIACEAE	<i>Salvia verbenaca</i>
LOASACEAE	<i>Kissenia capensis</i>
LOPHIOCARPACEAE	<i>Lophiocarpus polystachyus</i>
LORANTHACEAE	<i>Tapinanthus oleifolius</i>
MALVACEAE	<i>Abutilon angulatum</i> var. <i>angulatum</i>
MALVACEAE	<i>Corchorus asplenifolius</i>
MALVACEAE	<i>Hermannia abrotanoides</i>

Family	Species
MALVACEAE	<i>Hermannia bicolor</i>
MALVACEAE	<i>Hermannia coccocarpa</i>
MALVACEAE	<i>Hermannia minutiflora</i>
MALVACEAE	<i>Hermannia modesta</i>
MALVACEAE	<i>Hermannia sp.</i>
MALVACEAE	<i>Hermannia spinosa</i>
MALVACEAE	<i>Hermannia stricta</i>
MALVACEAE	<i>Hermannia tomentosa</i>
MALVACEAE	<i>Melhania didyma</i>
MALVACEAE	<i>Sida rhombifolia subsp. rhombifolia</i>
MELIACEAE	<i>Nymania capensis</i>
MESEMBRYANTHEMACEAE	<i>Dinteranthus wilmotianus</i>
MESEMBRYANTHEMACEAE	<i>Lithops bromfieldii</i>
MESEMBRYANTHEMACEAE	<i>Mesembryanthemum crystallinum</i>
MESEMBRYANTHEMACEAE	<i>Mesembryanthemum guerichianum</i>
MESEMBRYANTHEMACEAE	<i>Prenia tetragona</i>
MESEMBRYANTHEMACEAE	<i>Psilocaulon articulatum</i>
MESEMBRYANTHEMACEAE	<i>Psilocaulon coriarium</i>
MESEMBRYANTHEMACEAE	<i>Psilocaulon subnodosum</i>
MESEMBRYANTHEMACEAE	<i>Ruschia barnardii</i>
MESEMBRYANTHEMACEAE	<i>Ruschia divaricata</i>
MESEMBRYANTHEMACEAE	<i>Ruschia kenhardtensis</i>
MOLLUGINACEAE	<i>Limeum aethiopicum subsp. aethiopicum var. aethiopicum</i>
MOLLUGINACEAE	<i>Limeum argute-carinatum var. argute-carinatum</i>
MOLLUGINACEAE	<i>Limeum fenestratum var. fenestratum</i>
MOLLUGINACEAE	<i>Limeum myosotis var. confusum</i>
MOLLUGINACEAE	<i>Limeum sulcatum var. gracile</i>
MOLLUGINACEAE	<i>Mollugo cerviana var. cerviana</i>
MONTINIACEAE	<i>Montinia caryophyllacea</i>
NEURADACEAE	<i>Grielum humifusum var. humifusum</i>
NYCTAGINACEAE	<i>Phaeoptilum spinosum</i>
OXALIDACEAE	<i>Oxalis lawsonii</i>
PAPAVERACEAE	<i>Argemone mexicana forma mexicana</i>
PEDALIACEAE	<i>Pterodiscus luridus</i>
PEDALIACEAE	<i>Sesamum capense</i>
PHYLLANTHACEAE	<i>Phyllanthus humilis</i>
PHYLLANTHACEAE	<i>Phyllanthus maderaspatensis</i>
PLUMBAGINACEAE	<i>Dyerophytum africanum</i>
POACEAE	<i>Antheophora pubescens</i>
POACEAE	<i>Aristida adscensionis</i>
POACEAE	<i>Aristida congesta subsp. barbicollis</i>
POACEAE	<i>Aristida congesta subsp. congesta</i>
POACEAE	<i>Aristida diffusa subsp. burkei</i>
POACEAE	<i>Aristida engleri var. engleri</i>
POACEAE	<i>Aristida vestita</i>
POACEAE	<i>Brachiaria glomerata</i>
POACEAE	<i>Cenchrus ciliaris</i>
POACEAE	<i>Centropodia glauca</i>
POACEAE	<i>Digitaria sanguinalis</i>

Family	Species
POACEAE	<i>Digitaria</i> sp.
POACEAE	<i>Dinebra retroflexa</i>
POACEAE	<i>Echinochloa holubii</i>
POACEAE	<i>Echinochloa stagnina</i>
POACEAE	<i>Enneapogon cenchroides</i>
POACEAE	<i>Enneapogon desvauxii</i>
POACEAE	<i>Enneapogon scaber</i>
POACEAE	<i>Eragrostis annulata</i>
POACEAE	<i>Eragrostis aspera</i>
POACEAE	<i>Eragrostis biflora</i>
POACEAE	<i>Eragrostis brizantha</i>
POACEAE	<i>Eragrostis lehmanniana</i> var. <i>lehmanniana</i>
POACEAE	<i>Eragrostis porosa</i>
POACEAE	<i>Eragrostis procumbens</i>
POACEAE	<i>Eragrostis rotifer</i>
POACEAE	<i>Eriochloa fatmensis</i>
POACEAE	<i>Fingerhuthia africana</i>
POACEAE	<i>Melinis repens</i> subsp. <i>grandiflora</i>
POACEAE	<i>Melinis repens</i> subsp. <i>repens</i>
POACEAE	<i>Melinis</i> sp.
POACEAE	<i>Phalaris canariensis</i>
POACEAE	<i>Schmidtia kalahariensis</i>
POACEAE	<i>Setaria italica</i>
POACEAE	<i>Setaria pumila</i>
POACEAE	<i>Setaria</i> sp.
POACEAE	<i>Setaria verticillata</i>
POACEAE	<i>Stipagrostis amabilis</i>
POACEAE	<i>Stipagrostis anomala</i>
POACEAE	<i>Stipagrostis ciliata</i> var. <i>capensis</i>
POACEAE	<i>Stipagrostis hochstetteriana</i> var. <i>hochstetteriana</i>
POACEAE	<i>Stipagrostis obtusa</i>
POACEAE	<i>Stipagrostis uniplumis</i> var. <i>neesii</i>
POACEAE	<i>Stipagrostis uniplumis</i> var. <i>uniplumis</i>
POACEAE	<i>Tragus berteronianus</i>
POACEAE	<i>Tragus racemosus</i>
POACEAE	<i>Triraphis purpurea</i>
POACEAE	<i>Triraphis ramosissima</i>
POACEAE	<i>Urochloa panicoides</i>
POLYGALACEAE	<i>Polygala seminuda</i>
POLYGONACEAE	<i>Oxygonum alatum</i> var. <i>alatum</i>
PORTULACACEAE	<i>Anacampseros baeseckeii</i>
PORTULACACEAE	<i>Anacampseros filamentosa</i> subsp. <i>filamentosa</i>
PORTULACACEAE	<i>Anacampseros filamentosa</i> subsp. <i>namaquensis</i>
PORTULACACEAE	<i>Anacampseros filamentosa</i> subsp. <i>tomentosa</i>
PORTULACACEAE	<i>Avonia albissima</i>
PORTULACACEAE	<i>Portulaca hereroensis</i>
PORTULACACEAE	<i>Portulaca kermesina</i>
PORTULACACEAE	<i>Portulaca pilosa</i>
PORTULACACEAE	<i>Portulaca quadrifida</i>

Family	Species
PORTULACACEAE	<i>Talinum arnotii</i>
RESEDACEAE	<i>Oligomeris dipetala</i> var. <i>dipetala</i>
RHAMNACEAE	<i>Ziziphus mucronata</i> subsp. <i>mucronata</i>
RUBIACEAE	<i>Kohautia cynanchica</i>
RUBIACEAE	<i>Kohautia ramosissima</i>
SALICACEAE	<i>Salix mucronata</i> subsp. <i>mucronata</i>
SANTALACEAE	<i>Thesium hystricoides</i>
SANTALACEAE	<i>Thesium lineatum</i>
SCROPHULARIACEAE	<i>Aptosimum albomarginatum</i>
SCROPHULARIACEAE	<i>Aptosimum elongatum</i>
SCROPHULARIACEAE	<i>Aptosimum junceum</i>
SCROPHULARIACEAE	<i>Aptosimum lineare</i>
SCROPHULARIACEAE	<i>Aptosimum lineare</i> var. <i>lineare</i>
SCROPHULARIACEAE	<i>Aptosimum marlothii</i>
SCROPHULARIACEAE	<i>Aptosimum procumbens</i>
SCROPHULARIACEAE	<i>Aptosimum spinescens</i>
SCROPHULARIACEAE	<i>Jamesbrittenia argentea</i>
SCROPHULARIACEAE	<i>Jamesbrittenia aridicola</i>
SCROPHULARIACEAE	<i>Jamesbrittenia integerrima</i>
SCROPHULARIACEAE	<i>Manulea schaeferi</i>
SCROPHULARIACEAE	<i>Peliostomum leucorrhizum</i>
SCROPHULARIACEAE	<i>Selago divaricata</i>
SCROPHULARIACEAE	<i>Selago paniculata</i>
SOLANACEAE	<i>Lycium bosciifolium</i>
SOLANACEAE	<i>Lycium cinereum</i>
SOLANACEAE	<i>Lycium oxycarpum</i>
SOLANACEAE	<i>Lycium pumilum</i>
SOLANACEAE	<i>Nicotiana glauca</i>
SOLANACEAE	<i>Solanum burchellii</i>
SOLANACEAE	<i>Solanum capense</i>
TAMARICACEAE	<i>Tamarix usneoides</i> E.Mey. ex Bunge x <i>T. ramosissima</i> Ledeb.
TECOPHILAEACEAE	<i>Cyanella lutea</i>
THYMELAEACEAE	<i>Gnidia polycephala</i>
URTICACEAE	<i>Forsskaolea candida</i>
VERBENACEAE	<i>Chascanum garipense</i>
VERBENACEAE	<i>Chascanum incisum</i>
VERBENACEAE	<i>Chascanum pumilum</i>
ZYGOPHYLLACEAE	<i>Augea capensis</i>
ZYGOPHYLLACEAE	<i>Fagonia sinaica</i> var. <i>minutistipula</i>
ZYGOPHYLLACEAE	<i>Tribulus cristatus</i>
ZYGOPHYLLACEAE	<i>Tribulus pterophorus</i>
ZYGOPHYLLACEAE	<i>Tribulus terrestris</i>
ZYGOPHYLLACEAE	<i>Tribulus zeyheri</i> subsp. <i>zeyheri</i>
ZYGOPHYLLACEAE	<i>Zygophyllum dregeanum</i>
ZYGOPHYLLACEAE	<i>Zygophyllum flexuosum</i>
ZYGOPHYLLACEAE	<i>Zygophyllum simplex</i>
ZYGOPHYLLACEAE	<i>Zygophyllum</i> sp.
ASTERACEAE	<i>Geigeria ornativa</i> subsp. <i>ornativa</i>