Proposed Khoe Wind Energy Facility near De Doorns, Western Cape Province

Botanical Environmental Impact Assessment

PREPARED FOR
FE Hugo & Khoe (Pty) Ltd

DATE
05 August 2024

REFERENCE
0695823

DOCUMENT DETAILS

DOCUMENT TITLE	Proposed Khoe Wind Energy Facility near De Doorns, Western Cape Province
DOCUMENT SUBTITLE	Botanical Environmental Impact Assessment
PROJECT NUMBER	0695823
Date	05 August 2024
Version	01
Author	Raquel da Silva & Juan Swanepoel
Client name	FE Hugo & Khoe (Pty) Ltd

DOCUMENT HISTORY

				ERM APPROVAL TO ISSUE		
VERSION	REVISION	AUTHOR	REVIEWED BY	NAME	DATE	COMMENTS
1	000	Raquel da Silva & Juan Swanepoel	Stephen Burton	Dieter Rodewald	05 August 2024	

SIGNATURE PAGE

Proposed Khoe Wind Energy Facility near De Doorns, Western Cape Province

Botanical Environmental Impact Assessment

0695823

Stephen Burton
Managing Consultant (Ecologist)

Dieter Rodewald
Partner

ERM Southern Africa (Pty) Ltd
1st Floor
Great Westerford
240 Main Road, Rondebosch
Cape Town, 7700
T +27 21 681 5400

CONTENTS

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

Acronyms	Description
BAP	Biodiversity Action Plan
BESS	Battery Energy Storage System
BI	Biodiversity Importance
BMP	Biodiversity Management Plan
CC	Closed Canopy
CI	Conservation Importance
D	Duration
DFFE	Department of Forestry, Fisheries and the Environment
E	Extent
EA	Environmental Authorization
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EOO	Extent of Occurrence
ERM	Environmental Resources Management
ESIA	Environmental and Social Impact Assessment
FE	Functional Entity
FFs 15	North Langeberg Sandstone Fynbos
FFS 16	South Langeberg Sandstone Fynbos
FI	Functional Integrity
FRs 6	Matjiesfontein Shale Renosterveld

Acronyms	Description
ha	Hectares
IPP	Independent Power Producers
km	Kilometres
kV	Kilovolt
M	Magnitude
MW	Megawatt
O&M	Operations and Maintenance
OSS	On-Site Substation
P	Probability
PAOI	Project Area of Interest
QGIS	Quantum Geographic Information System
R	Reversibility
RR	Receptor Resilience
SANBI	South African National Biodiversity Institute
SANLC	South African National Land Cover
SCC	Species of Conservation Concern
SD	Secure Digital
SEI	Site Ecological Importance
WEF	Wind Energy Facility
WTG	Wind Turbine Generator

EXECUTIVE SUMMARY

ERM Southern Africa (Pty) Ltd. ("ERM") was contracted by Functional Entity (FE) Hugo & Khoe (Pty) Ltd ("The Client") to compile a Botanical Specialist Impact Assessment for the proposed Khoe Wind Energy Facility (WEF).

The proposed Khoe WEF will be located near De Doorns in the Western Cape Province and include up to 29 turbines and have a maximum output of 290 MW. The development will also include access roads and internal roads, a Battery Energy Storage System (BESS), Operations and Maintenance (O&M) building, On-Site Substation (OSS) and temporary site office.

The site is classified as High Sensitivity with areas characterized as Medium and Low Sensitivity by the Department of Forestry, Fisheries and the Environments (DFFE) Online Screening Tool (ST). Up to 1 782 plant species are potentially present on site, of which 48 are listed as SCC by the DFFE Online ST. Given the high number of species potentially present it is likely the number of Species of Conservation Concern (SCC) is greater than that provided by the DFFE Online ST. The proposed development area includes three vegetation types that are listed as Least Concern (LC) by the Red List of Ecosystems (RLE), and intersects in some areas with Critical Biodiversity Areas (CBA) and Ecological Support Areas (ESA).

The anticipated impacts include vegetation clearing, loss of individual SCC, alien invasive species, soil erosion, chemical contamination, and fire. Cumulative impacts include those that affect broad-scale ecological processes and conservation objectives. With adherence to the prescribed mitigation measures opportunities exist to promote conservation efforts, community engagement and education, and local environmental monitoring and research.

It is the Specialists opinion that SCC are likely present on site, therefore the DFFE Online ST Assessment of High Sensitivity in the Plant Species Theme for some areas is accurate. High sensitivity areas are predominantly those listed as CBAs. All other areas are either Medium Sensitivity or Low Sensitivity.

It is the Specialists opinion that the proposed Khoe WEF may be considered for development, provided all mitigation measures are adhered to.

1. INTRODUCTION

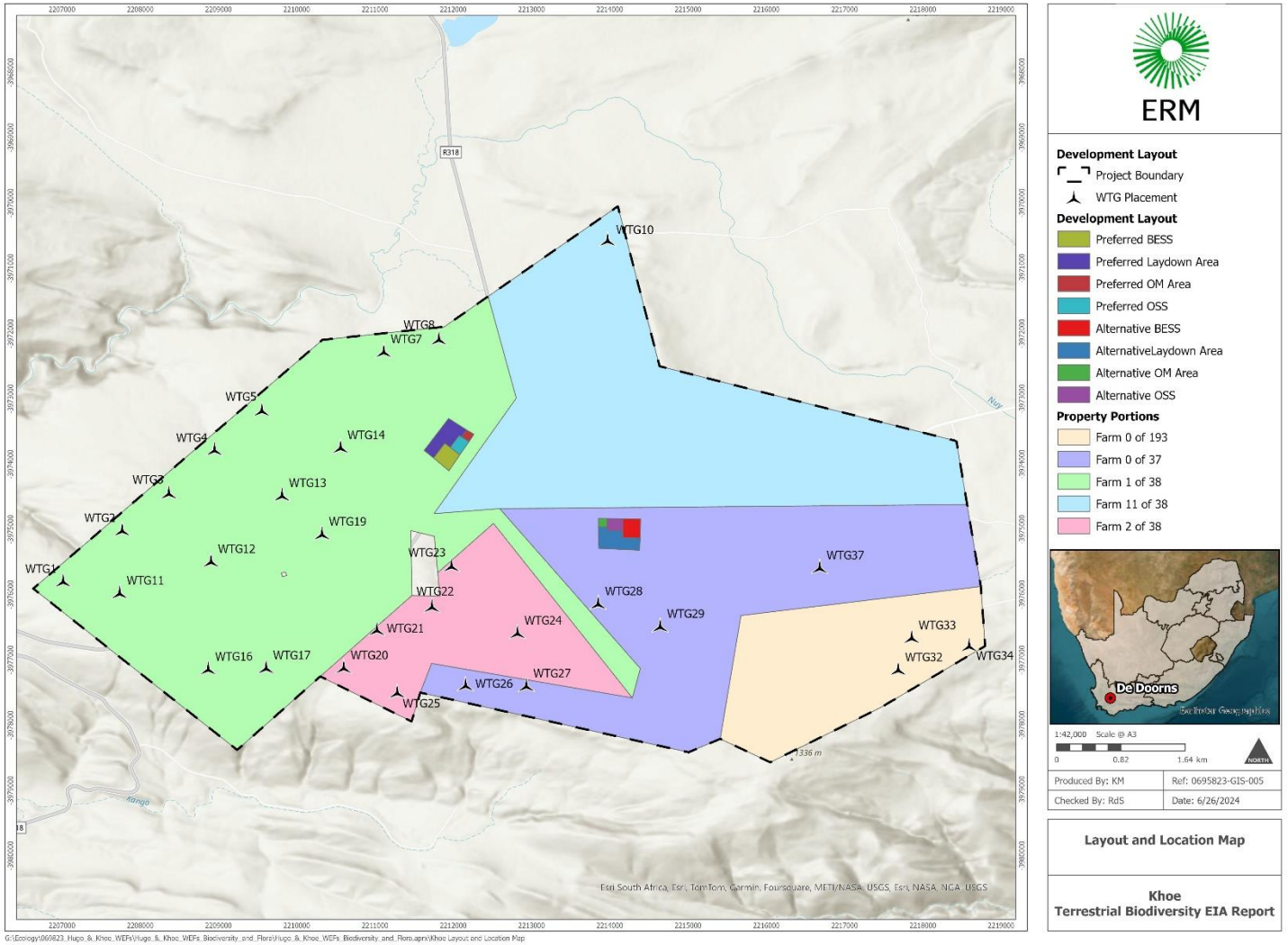
1.1 BACKGROUND

ERM Southern Africa (Pty) Ltd. ("ERM") was contracted by Functional Entity (FE) Hugo & Khoe (Pty) Ltd ("The Client") to compile a Botanical Specialist Impact Assessment for the proposed Khoe Wind Energy Facility (WEF), located near De Doorns in the Western Cape Province of South Africa. The primary purpose of this report is to identify and describe the plant species and habitats that are likely present within the proposed Project Area of Influence (PAOI), the anticipated impacts for the proposed development, and to evaluate the suitability of the proposed development in relation to the Plant Species Theme.

1.2 PROJECT DESCRIPTION

The proposed Khoe WEF, located approximately 22 km south of De Doorns on property portions Farms 11 of 38, -2 of 38, -1 of 38, -0 of 193, and -0 of 37, will comprise up to 29 turbines (Figure 1) with a maximum output of up to 290 MW. This operation will also comprise access roads and internal roads, a Battery Energy Storage System (BESS), an Operations and Maintenance (O&M) building, an On-Site Substation (OSS), and a temporary site office. A 33 kV underground/overhead cabling network along the proposed roads and 132 kV overhead transmission lines connecting the Independent Power Producers (IPP) substation will be installed to connect the WEF to the national electrical grid network. The grid connection will form part of a separate application process.

FIGURE 1: LAYOUT AND LOCATION OF THE PROPOSED KHOE WIND ENERGY FACILITY NEAR DE DOORNS, WESTERN CAPE PROVINCE



1.3 TERMS OF REFERENCE

This report describes the proposed PAOI in terms of the plant species present, with a specific focus on SCC, along with the anticipated impacts and sensitivities.

This report follows the Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts of Terrestrial Plant Species, Government Gazette No. 43855, Government Notice No. 1150, 30 October 2020[1] and the associated Amendment published in Government Gazette No. 47448, Government Notice No. 2717, 4 November 2022[2]; and the combined DFFE, South African National Biodiversity Institute (SANBI) and BirdLife South Africa's Species Environmental Assessment Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessment in South Africa (2022)[3].

1.3.1 APPLICABLE STANDARDS

This impact assessment identifies policies and legislations at different geographic scales that must be considered during the EIA process. These policies and legislations are described in Table 1 below.

TABLE 1: APPLICABLE POLICIES AND LEGISLATIONS AT DIFFERENT GEOGRAPHIC SCALES.

PROVINCIAL STANDARDS	
1. Cape Nature and Environmental Conservation Ordinance 19 of 1974.	Applicable in the former Cape Province, this Act forms the legal basis for nature conservation and environmental management. Key aspects addressed include Protected Areas, Species Protection, Environmental Management, and Public Participation.
2. Western Cape Biosphere Reserves Act 6 of 2011.	Focuses on the establishment, management and protection of biosphere reserves in the Western Cape Province. Key points include Biosphere Reserve Designation, Management and Conservation, Stakeholder Involvement, and Research and Education.
3. Western Cape Land Use Planning Act, 2015.	Provides a framework for land use management and spatial planning within the Western Cape Province. Main elements include Spatial Planning, Land Use

[1] https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
[2] https://eolstoragewe.blob.core.windows.net/wm-698609-cmsimages/474484-11NationalGovernment(4)AmendmentofProtocolsforspecialistassessments.pdf
[3] http://opus.sanbi.org/jspui/handle/20.500.12143/6922

	Management, Public Participation and Development Principles.
4. Western Cape Biodiversity Act 6 of 2021.	The Act seeks to balance conservation efforts with sustainable use, involving various stakeholders to protect the unique biodiversity of the Western Cape Province. Key provisions include Biodiversity Stewardship, Regulation and Enforcement, Sustainable Use, and Research and Education.
NATIONAL STANDARDS	
1. National Environmental Management: Protected Areas Act, 2003 (NEMA).	Provides a legal framework to safeguard South Africa's biodiversity and natural heritage with specific focus on Protected Area Categories, Protected Area Management, Stakeholder Involvement, and Conservation Objectives.
2. National Environmental Management: Biodiversity Act, 2004 (NEMBA).	Provides a legal framework to promote conservation and sustainable use of South Africa's diverse biological resources while considering social, economic, and environmental factors, fostering a balance between conservation efforts and development needs. Key aspects of the Act include Biodiversity Conservation, Protected Areas and Species, Invasive Species Management, Bioprospecting and Access to Genetic Resources, and Research and Information.
3. Conservation of Agricultural Resources Act, 1983 (CARA).	Provides a framework to ensure the conservation and sustainable utilization of agricultural resources, protecting the environment and promoting the long-term viability of agriculture in South Africa. Key points of the Act include Soil Conservation, Water Conservation, Control of Invasive Species, Land-Use Planning, and Research and Education.

2. METHODOLOGY

2.1 DESKTOP STUDY

The desktop study was initiated by obtaining the proposed development area's expected sensitivity in the Plant Theme using the DFFE Online Screening Tool (ST)[4]. The recorded land-use of the proposed PAOI was determined using the latest available South African National Land Cover (SANLC, 2020)[5] spatial datasets and Quantum Geographic Information System (QGIS). These data were compared with previously identified important biodiversity areas in proximity by consulting the following resources:

- The Red List of Ecosystems (RLE, 2022) spatial dataset[6] to determine the Red List Status and Category of ecosystem(s) within the proposed PAOI.
- The Langeberg Key Biodiversity Areas (KBA) spatial dataset[7] was used to determine the presence of Critical Biodiversity Areas (CBA1/2), Ecological Support Areas (ESA1/2), Protected Areas (PA) and Other Natural Areas (ONA) within the proposed PAOI.
- The SANBI 2018 Beta Vegetation Map of South Africa, Lesotho and Swaziland Spatial Dataset[8] to determine the Vegetation Units present within the proposed PAOI.

In addition, the resources below were consulted to compile a list of plant SCC that are potentially present within the proposed development area footprint:

- The SANBI Plants of Southern Africa (POSA) Brahms database[9] to identify plant species that have been recorded in the proposed PAOI.
- The Biodiversity and Development Institute's Virtual Museum database[10] to determine the presence of plant species that have been recorded in the proposed PAOI.
- The Global Biodiversity Information Facility (GBIF) database[11] to determine the presence of plant species that have been recorded in the proposed PAOI.
- The SANBI Red List of South African Species[12] to confirm the national Red List Status and Category of plant species that have been recorded in the proposed PAOI.
- The Red List of South African Plant Species[13] to confirm the national Red List Status and Category of plant species that have been recorded in the proposed PAOI.
- The International Union for the Conservation of Nature's (IUCN) Red List[14] to confirm the international Red List Status and Category of plant species that have been recorded in the proposed PAOI.

2.2 SITE VERIFICATION

The specialist spent two days on site (28 – 29 June 2022) in conjunction with the terrestrial animal specialist retrieving camera trap data and replacing Secure Digital (SD) memory cards to

[4] https://screening.environment.gov.za/screeningtool/#/pages/welcome
[5] https://egis.environment.gov.za/sa_national_land_cover_datasets
[6] http://bgis.sanbi.org/SpatialDataset/Detail/6715
[7] http://bgis.sanbi.org/SpatialDataset/Detail/629
[8] http://bgis.sanbi.org/SpatialDataset/Detail/670
[9] https://posa.sanbi.org/sanbi/Explore
[10] https://vmus.adu.org.za/
[11] https://www.gbif.org/
[12] http://speciesstatus.sanbi.org/
[13] http://redlist.sanbi.org/index.php
[14] https://www.iucnredlist.org/

verify the sensitivity of the proposed study area as described the DFFE Online Screening Tool, and land-use as described by SANLC.

An additional site visit was conducted (10 – 16 March 2024) to conduct terrestrial biodiversity surveys to determine species presence and distribution on site in correlation with the Scoping Phase project layout.

2.3 SITE ECOLOGICAL IMPORTANCE

Habitat sensitivity is determined as a function of several factors including the presence and distribution of SCC, intactness of habitat, extent of impacts, and the capacity of the habitat to withstand and/or recover from disturbance. These factors are assessed on a scale from 'Low' to 'Very High' according to pre-determined conditions and incorporated into a formula to determine the Site Ecological Importance (SEI) for each habitat. Full methodology can be found in Appendix A. How the different SEI outcomes relate to any proposed development is described in Table 2 below.

TABLE 2: INTERPRETING SITE ECOLOGICAL IMPORTANCE OUTPUTS.

Site Ecological Importance	Interpretation in relation to proposed development activities
Very High	Avoidance mitigation - no destructive development activities should be considered. Offset mitigation not acceptable/not possible (i.e., last remaining populations of species, last remaining good condition patches of ecosystems/unique species assemblages). Destructive impacts for species/ecosystems where persistence targets remain.
High	Avoidance mitigation wherever possible. Minimization mitigation – changes to project infrastructure design to limit the amount of habitat impacted, limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimization and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimization and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities.
Very Low	Minimization mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

2.4 IMPACT ASSESSMENT AND MITIGATION

This Impact Assessment (IA) has been undertaken following a systematic process that predicts and evaluates the impacts of the project activities on selected aspects of the environmental receptors. Furthermore, the IA identifies measures that the project will need to take to avoid, reduce and remedy (mitigation), as far as is reasonably practicable. A comprehensive Impact Assessment Methodology is provided in Appendix B.

2.5 ASSUMPTIONS AND LIMITATIONS

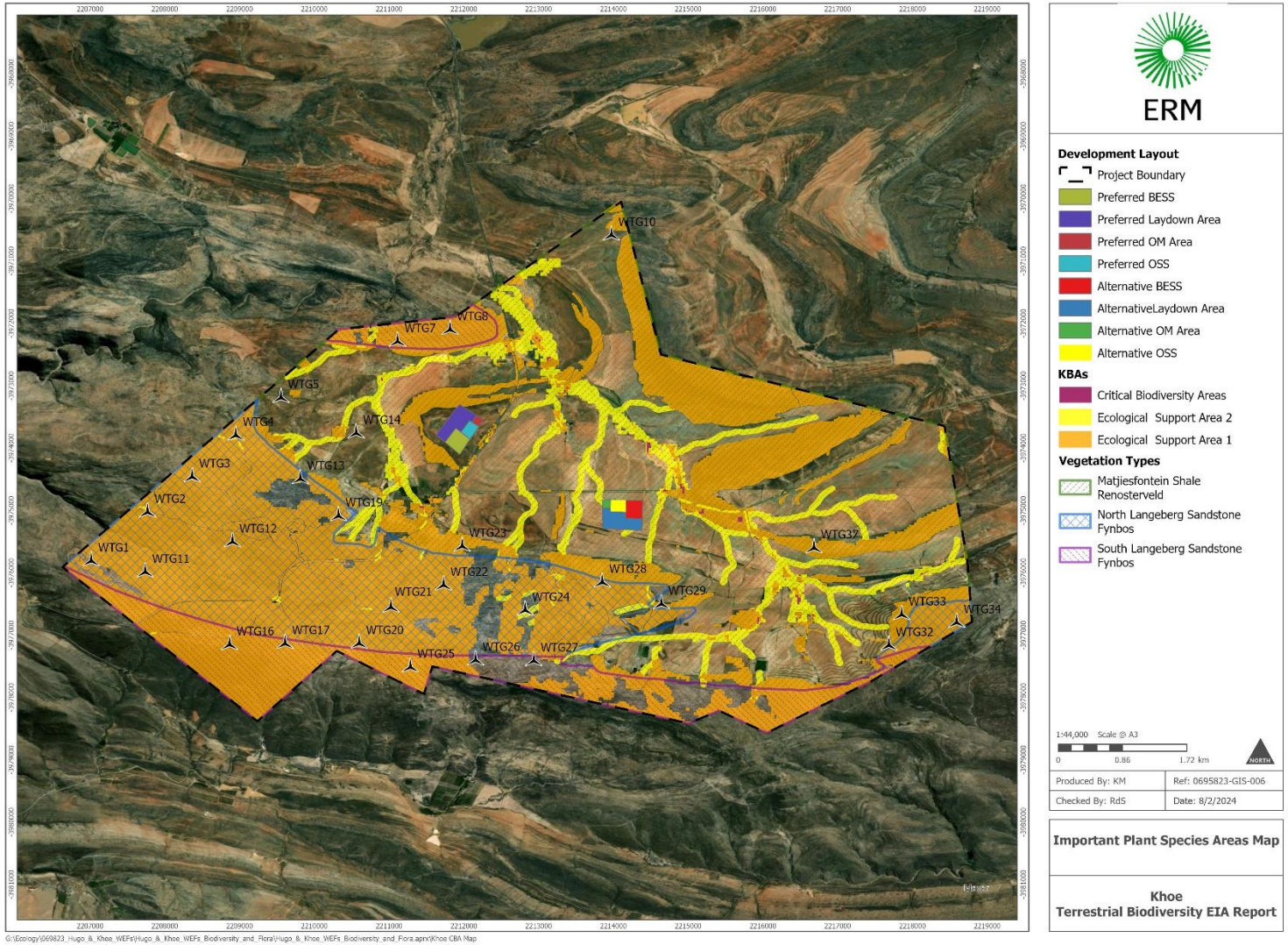
- The contents of this report relate to the proposed Khoe WEF and associated infrastructure as presented in Figure 1.
- SCC are classified as Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Data Deficient (DD) and Rare.
- The identity of several plant SCC are withheld from this- and subsequent reports due to the sensitivity of these species to illegal harvesting. These species are known by numerical identifiers (Sensitive Species 142, 207, 508, 521, 654, 1004, and 1209) assigned by the SANBI. The identity of these species has been made available to the Specialist for consideration during the compilation of reports relevant to the study area.
- Previous studies used to compile online species distribution datasets used to augment the species list for the proposed Khoe WEF and associated infrastructure PAOI are extremely limited and cannot be seen as fully representative of the diversity of plant species potentially on site.
- Where online databases provided records of species that have several sub-species but provided no reference to which sub-species was recorded, it was assumed the sub-species was that with the greatest conservation importance.

3. RESULTS

3.1 LAND USE AND IMPORTANT PLANT AREAS

The proposed Khoe WEF PAOI is dominated by Matjiesfontein Shale Renosterveld (FRs 6), followed by a section of North Langeberg Sandstone Fynbos (FFs 15) and a smaller section of South Langeberg Sandstone Fynbos (FFs 16) in the southern sections of the project PAOI (Figure 2). All three of the vegetation types identified are listed as Least Concern by the RLE (2021).

FIGURE 2: IMPORTANT PLANT SPECIES AREAS WITHIN THE PROPOSED KHOE WIND ENERGY FACILITY STUDY AREA.



The landscape of the Matjiesfontein Shale Renosterveld (FRs 6) is described as being elevated areas (low mountains, parallel hills and mid-altitude plateaus) of low, moderate density leptophyllous shrubland dominated by renosterbos (*Dicerothmanus rhinocerotis*). Heuweltjies, which are soil mounds associated with increased local biodiversity, have been recorded in low densities in some places[15]. The North (FFs 15) and South Langeberg Sandstone Fynbos (FFs 16) are similar in their constituent vegetation types of proteoid, restioid and ericaceous fynbos fynbos, differing only by occurrence altitude and (FFs 15) also including asteraceous fynbos on lower slopes.

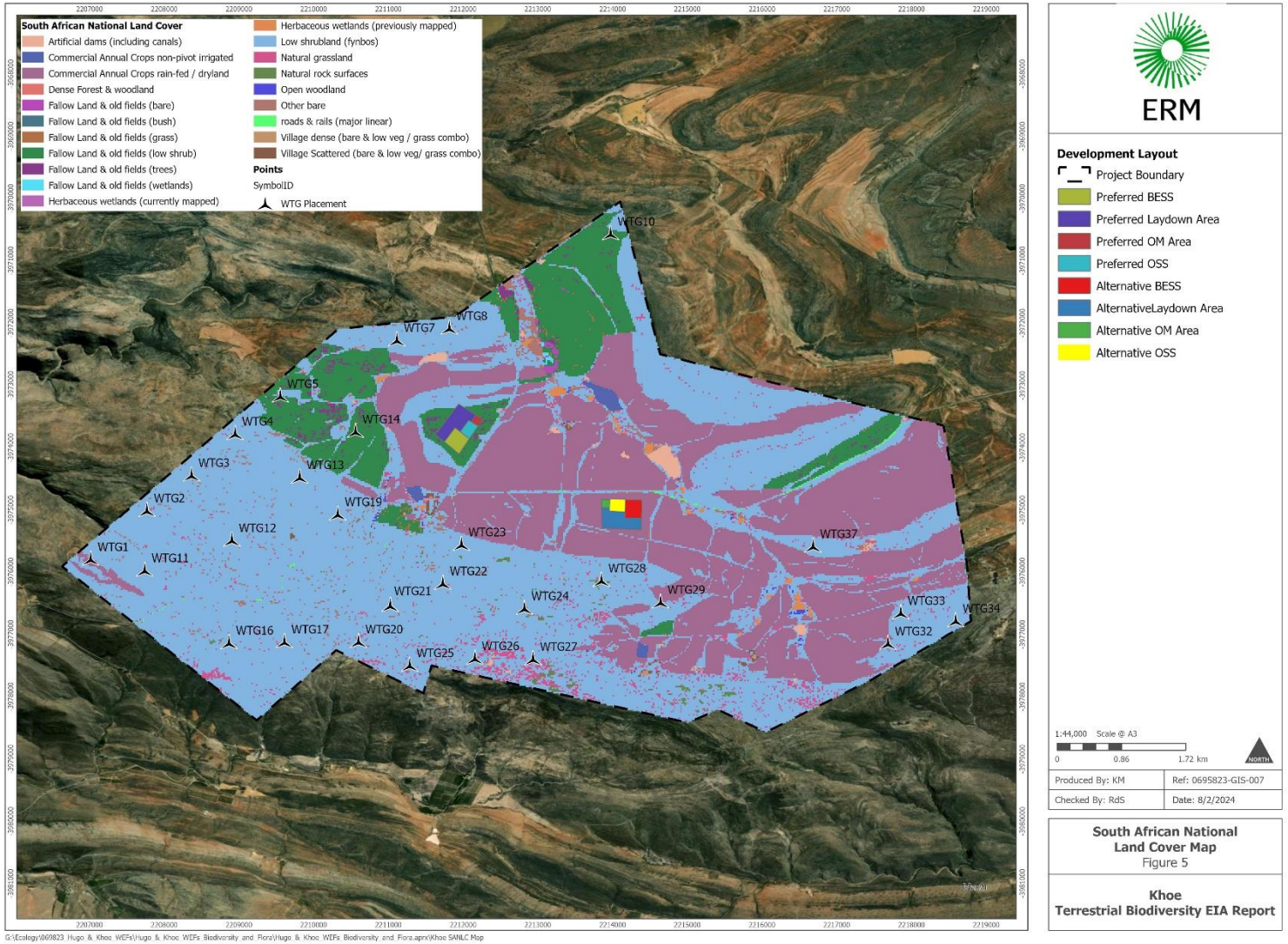
The majority of the site falls within ESA1, which is classified as such due to the presence of both aquatic- and terrestrial features that contribute to broader ecological balance and processes that are essential in supporting biodiversity conservation. Areas identified as ESA2 are watercourses marked for rehabilitation from former land-use. Small areas identified as CBAs are due to the presence of aquatic features that maintain important ecological balance and processes that are essential in supporting biodiversity conservation. None of the WTG occur in the CBA, and are mostly distributed in ESA1 and ESA2, with some in areas not marked as important plant areas. According to the SANLC (2020) spatial dataset the proposed Khoe WEF PAOI (Figure 3) is dominated by low fynbos shrublands, commercial annual crops (rain-fed, dryland or non-irrigated) and, fallow lands and old fields (low vegetation and grassland).

The ESAs must be maintained in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functions are not compromised. CBA classified as such due to the presence of various aquatic features that contribute to high levels of biodiversity in this specific area, and currently includes no WTGs. CBAs must be maintained in a natural, or near-natural state with no further loss of natural habitat. Degraded areas in the CBA should be rehabilitated, and only low impact land uses are considered appropriate.

According to the SANLC (2020) spatial dataset the proposed Khoe WEF PAOI (Figure 3) is dominated by low fynbos shrublands, commercial annual crops (rain-fed, dryland or non-irrigated) and, fallow lands and old fields (low vegetation and grassland). The site inspection confirmed that large portions of the proposed project site have been modified and / or disturbed through agricultural activity. Strips of natural vegetation that remain, particularly those around drainage lines, perennial rivers and farm dams, appear to be overgrazed.

[15]Mucina, L. & Rutherford, M.C. (2006). The vegetation of South Africa, Lesotho and Swaziland. South African National Biodiversity Institute.

FIGURE 3: THE LATEST AVAILABLE SOUTH AFRICAN NATIONAL LAND COVER DATASET OF THE PROPOSED KHOE WIND ENERGY FACILITY.



Additional land use types present include dense forest and woodland (35 – 75% closed canopy/CC), open woodland (10 – 35% CC), natural grassland, artificial dams, herbaceous wetlands (previous mapped extent), other bare areas, commercial annuals (non-pivot irrigated), commercial annual crops (rain-fed, dryland and non-irrigated), fallow lands and old fields (trees, grass, low vegetation and wetlands), village scattered, village dense and, roads and rail (major linear).

3.1.1 SURVEY LOCATIONS

Seven vegetation surveys were conducted on the proposed Khoe WEF. Surveys were conducted primarily in the dominant Matjiesfontein Shale Renosterveld (FRs 6) and include four Low Shrubland habitats, one Riparian habitat and one Wash/Drainage habitat. One Rocky Outcrop survey was conducted in the North Langeberg Sandstone Fynbos (FFs 15) habitat.

3.1.1.1 MATJIESFONTEIN SHALE RENOSTERVELD RIPARIAN HABITAT

The Matjiesfontein Shale Renosterveld Riparian habitat is characterized by water body depressions, minimal rockiness (up to 2%) and up to 50% exposed soil. Dominant species include *Aizoon africanum* and *Cynanchum viminale.* While renosterbos was present within the landscape, it's occurrence was not as dominant, only reporting up to 40% in some areas of vegetation cover. The habitat exhibits signs of disturbance, notably marked by the presence of alien invasive species *Cirscium vulgare*, which poses a threat to the integrity of the habitat and local community.

3.1.1.2 MATJIESFONTEIN SHALE RENOSTERVELD LOW SHRUBLAND

Sensitive areas located South-west within the project boundary, is characterized by koppies and slightly undulating hills. The landscape is predominantly rocky, with rockiness reaching up to 90%. These areas experience disturbances from existing powerlines, while dominant species such as *Protea repense, Tenaxia stricta, Cliffortia ruscifolia*, and renosterbos contribute to the vegetation composition. Notably, the presence of the alien invasive *Opuntia sp* adds to the ecological challenges in this sensitive habitat.

On south-facing slopes, *Restio vimineus* becomes more prevalent as the slope decreases, with dominant shrubs including *Cliffortia ruscifolia* and *Protea repens*. Renosterbos is occasional, while *Argiope australis* is common on lower slopes.

In low shrublands north-west of the project boundary, the landscape shows signs of disturbance, with alien invasives such as *Acacia mearnsii, Pinus pinaster, Pinus radiata*, and *Atriplex nummularia* present. Renosterbos emerges as a dominant species, albeit alongside invasive species. The topography of this area is characterized by lightly undulating plains, with rockiness reaching up to 50% in some areas and clay-like soils present. These combined findings of four vegetation surveys reveal the disturbed and transformed low shrubland habitats on Khoe.

3.1.1.3 MATJIESFONTEIN SHALE RENOSTERVELD DRAINAGE AREA

The Matjiesfontein Shale Renosterveld drainage area habitat was characterized by flat drainage flood plains, featuring minimal exposed soil and decreased rockiness (up to 1%). Groundcovers were prevalent, covering up to 60% of the landscape. Several invasive flora species were present within the landscape and consisted of *Arundo donax, Crsium vulgare* and *Acacia mearnsii*. *Rhodocoma fruticose* was dominant along drainage lines.

3.1.1.4 NORTH LANGEBERG SANDSTONE FYNBOS ROCKY OUTCROPS

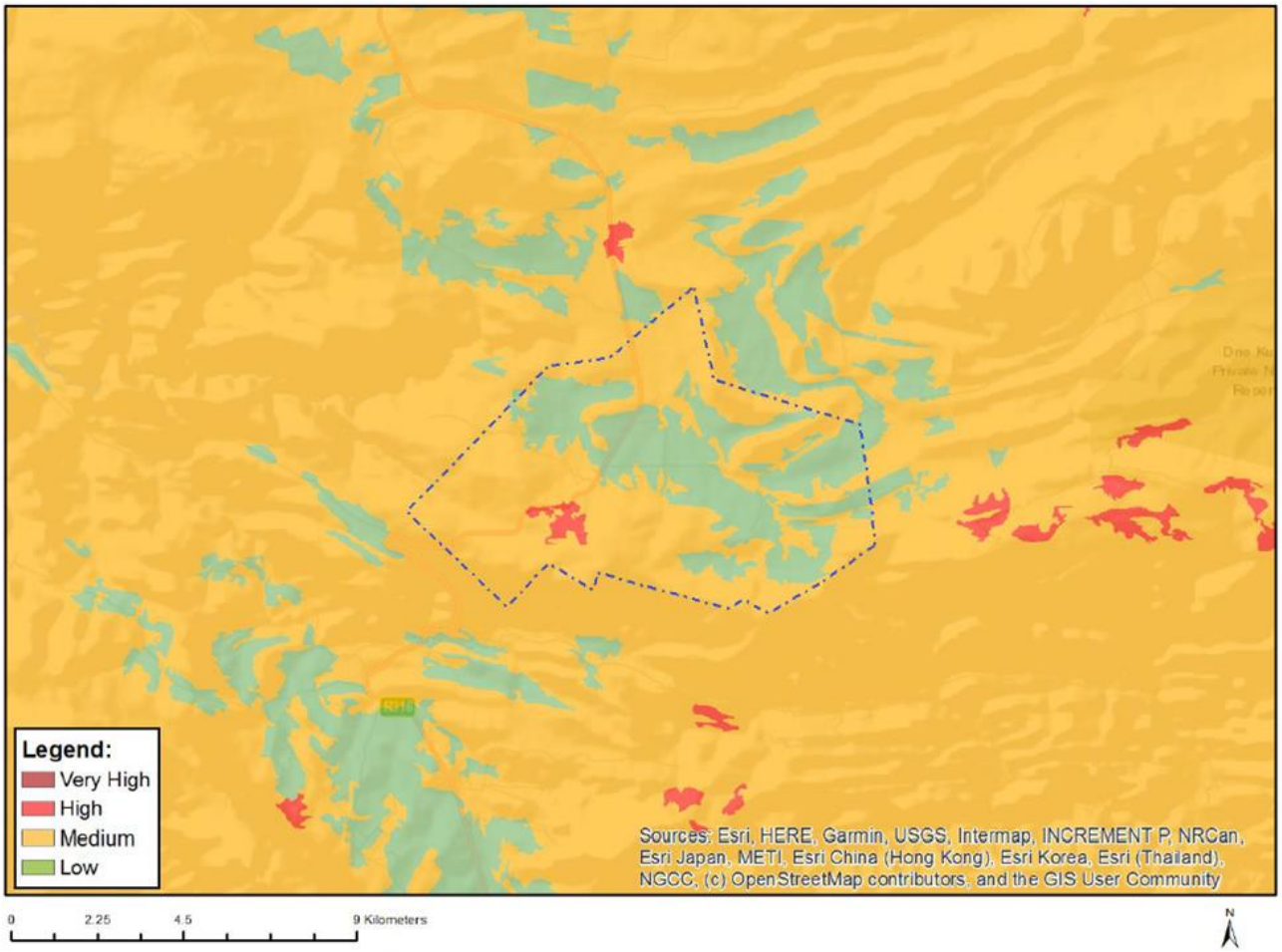
The North Langeberg Sandstone habitat survey was conducted on a North-east facing slope with rockiness reaching up to 80% in some areas. The main disturbance listed in the area was a road crossing through the farm. Renosterbos was dominant within the landscape followed by *Oedera genistifolia.* No invasive species were reported on these rocky outcrops.

3.2 PLANT SPECIES

The DFFE Online ST identifies the study area as having a High Sensitivity rating in the Plant Species Theme triggered by the presence of two species, including the VU *Drosanthumum giffenii* and the Rare Sensitive Species 207 (Figure 4). The POAI is predominantly Medium Sensitivity triggered by the potential presence of 42 plant species, followed by areas of Low Sensitivity. *Drosanthemum giffenii* is a highly palatable species threatened by overgrazing, known from <10 locations with an Extent of Occurrence (EOO) of ± 8 341 km^2, but noted to possibly be under-sampled[16]. The precise habitat of Sensitive Species 207 is not described, but has a known range in the Wabooms Mountains between Worcester, Robertson and De Doorns. This species occurs in mountainous areas on the arid margin of the fynbos biome, and there is currently very little human impact on its habitat. Its only known location is not currently formally protected, but similar habitat to the east and west of this site is well protected.

[16] Vlok, J. & Schutte-Vlok, A.L. (2015). Plants of the Klein Karoo, 2nd Revised Edition. Umdaus Press, Hatfield, South Africa.

FIGURE 4: DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT'S ONLINE SCREENING TOOL ASSESSMENT OF THE PROPOSED KHOE WIND ENERGY FACILITTY STUDY AREA IN THE PLANT SPECIES THEME.



A total of 1 782 plant species potentially occur in and/or within close proximity of the proposed Khoe WEF and are presented in Appendix C. The DFFE Online ST identified a single CR, four EN, 19 VU, 23 Rare and one Critically Rare plant species according to Regional Red Lists potentially present within the proposed study area (Table 3). The sources include the SANBI POSA Brahms (B) database, the Global Biodiversity Information Facility (GBIF) database, The DFFE Online ST) and the Biodiversity and Development Institute's Virtual Museum (VM) database.

TABLE 3: PLANT SPECIES OF CONSERVATION CONCERN TRIGGERED BY THE DFFE ONLINE SCREENING TOOL.

Family	Species	Red List (Regional:Global)	Source
Aizoaceae	*Antimima condensa*	Rare:NE	B, ST
Aizoaceae	*Drosanthemum giffenii*	VU:NE	GBIF, ST
Aizoaceae	*Drosanthemum tuberculiferum*	EN:NE	GBIF, ST
Aizoaceae	*Esterhuysenia inclaudens*	Rare:NE	ST
Aizoaceae	*Vlokia ater*	Critically Rare:NE	GBIF, ST

Family	Species	Red List (Regional:Global)	Source
Asparagaceae	*Asparagus mollis*	VU:NE	ST
Asteraceae	*Anderbergia elsiae*	Rare:NE	ST
Asteraceae	*Athanasia hirsuta*	Rare:NE	ST
Asteraceae	*Athanasia hirsuta*	Rare:NE	B, GBIF
Asteraceae	*Metalasia helmei*	Rare:NE	B, GBIF
Brassicaceae	*Heliophila elata*	VU:NE	ST
Ericaceae	*Erica constantia*	Rare:NE	ST
Ericaceae	*Erica costatisepala*	Rare:NE	ST
Ericaceae	*Erica glandulipila*	Rare:NE	ST
Ericaceae	*Erica setulosa*	Rare:NE	ST
Fabaceae	*Amphithalea pageae*	VU:VU	GBIF
Fabaceae	*Amphithalea spinosa*	VU:NE	B, GBIF, ST
Fabaceae	*Aspalathus aculeata*	VU:NE	ST
Fabaceae	*Aspalathus muraltioides*	EN:NE	ST
Fabaceae	*Aspalathus recurva*	VU:NE	ST
Fabaceae	*Aspalathus rostrata*	Rare:NE	B, ST
Fabaceae	*Aspalathus shawii* subsp. *longispica*	Rare:NE	GBIF, ST
Fabaceae	*Lotononis argentea*	VU:NE	GBIF, ST
Fabaceae	*Lotononis gracilifolia*	EN:NE	GBIF, ST
Fabaceae	*Otholobium* sp. nov (Storton & Zanotvska 11281 NBG)	VU:NE	ST
Iridaceae	*Ixia fucata*	Rare:NE	ST
Iridaceae	*Ixia fucata*	Rare:NE	GBIF
Iridaceae	*Ixia oxalidiflora*	VU:NE	B, GBIF
Iridaceae	*Ixia parva*	VU:NE	ST
Iridaceae	*Romulea malaniae*	CR:NE	B, ST
Iridaceae	*Romulea vlokii*	VU:NE	GBIF, ST
Orchidaceae	*Pachites bodkinii*	Rare:NE	ST
Proteaceae	*Leucadendron cordatum*	Rare:LC	B, GBIF, ST
Proteaceae	*Protea rupicola*	EN:EN	ST
Restionaceae	*Restio aridus*	VU:NE	ST
Rhamnaceae	*Phylica mairei*	Rare:NE	ST
Rubiaceae	*Nenax velutina*	Rare:NE	ST
Rutaceae	*Acmadenia matroosbergensis*	Rare:NE	B, GBIF, ST

Family	Species	Red List (Regional:Global)	Source
Rutaceae	*Agathosma subteretifolia*	Rare:NE	B, ST
Rutaceae	*Diosma passerinoides*	VU:NE	ST
Thymelaeaceae	*Lachnaea oliverorum*	VU:NE	B, GBIF, ST
Withheld	Sensitive Species 1004	VU:NE	GBIF, ST
Withheld	Sensitive Species 1209	Rare:NE	ST
Withheld	Sensitive Species 142	VU:NE	ST
Withheld	Sensitive Species 207	Rare:NE	B, ST
Withheld	Sensitive Species 508	Rare:NE	ST
Withheld	Sensitive Species 521	VU:NE	ST
Withheld	Sensitive Species 654	VU:NE	ST

These include a single EN and one VU plant species according to International Red Lists potentially present within the proposed study area. Given the number of additional plant species associated with the PAOI the number of Regional and Global SCC will likely be much higher following detailed survey and review.

3.3 SITE ECOLOGICAL IMPORTANCE

Site Ecological Importance (SEI) values for habitats 1) Terrestrial-Aquatic Ecotones, 2) Matjiesfontein Shale Renosterveld, 3) North Langeberg Sandstone Fynbos, and 4) South Langeberg Sandstone Fynbos are provided in Tables 4 – 7 below.

TABLE 4: SITE ECOLOGICAL IMPORTANCE OF TERRESTRIAL-AQUATIC ECOTONES.

Conservation Importance (CI): High
Highly likely occurrence of CR, EN and/or VU species that have a global EOO >10 km^2 (Table 3).
Functional Integrity (FI): High
Ecosystem type of LC with relatively good habitat connectivity and minor negative ecological impacts.
Biodiversity Importance (BI): High
Receptor Resilience (RR): Medium
Slow anticipated recovery (± >10 years) to restore >75 % of the original species composition.
Site Ecological Importance (SEI): High
Implications for Wind Energy mitigation:
1. Avoidance where possible.
2. Minimisation mitigation where avoidance is not possible.

3. Adapt layout design to minimize impacts.
4. Offset mitigation may be required.

TABLE 5: SITE ECOLOGICAL IMPORTANCE OF MATJIESFONTEIN SHALE RENOSTERVELD.

Conservation Importance (CI): High
Highly likely occurrence of CR, EN and/or VU species that have a global EOO >10 km^2 (Table 3).
Functional Integrity (FI): High
Large (20 – 100 ha) intact natural area with good habitat connectivity with good rehabilitation potential.
Biodiversity Importance (BI): High
Receptor Resilience (RR): High
Habitat can recover relatively quickly (5-10 years) to restore >75 % of the original species due to good habitat connectivity.
Site Ecological Importance (SEI): Medium
Implications for Solar Energy mitigation:
1. Minimisation and restoration mitigation.
2. Development activities of medium impact acceptable followed by appropriate restoration activities.
3. Monitor regularly for erosion and mitigate immediately when identified.
4. Monitor regularly for alien invasive species and remove immediately when detected.

TABLE 6: SITE ECOLOGICAL IMPORTANCE OF NORTH LANGEBERG SANDSTONE FYNBOS.

Conservation Importance (CI): High
Highly likely occurrence of CR, EN and/or VU species that have a global EOO >10 km^2 (Table 3).
Functional Integrity (FI): High
Large (20 – 100 ha) intact natural area with good habitat connectivity with good rehabilitation potential.
Biodiversity Importance (BI): High
Receptor Resilience (RR): High
Habitat can recover relatively quickly (5-10 years) to restore >75 % of the original species due to good habitat connectivity.
Site Ecological Importance (SEI): Medium
Implications for Solar Energy mitigation:
1. Minimisation and restoration mitigation.

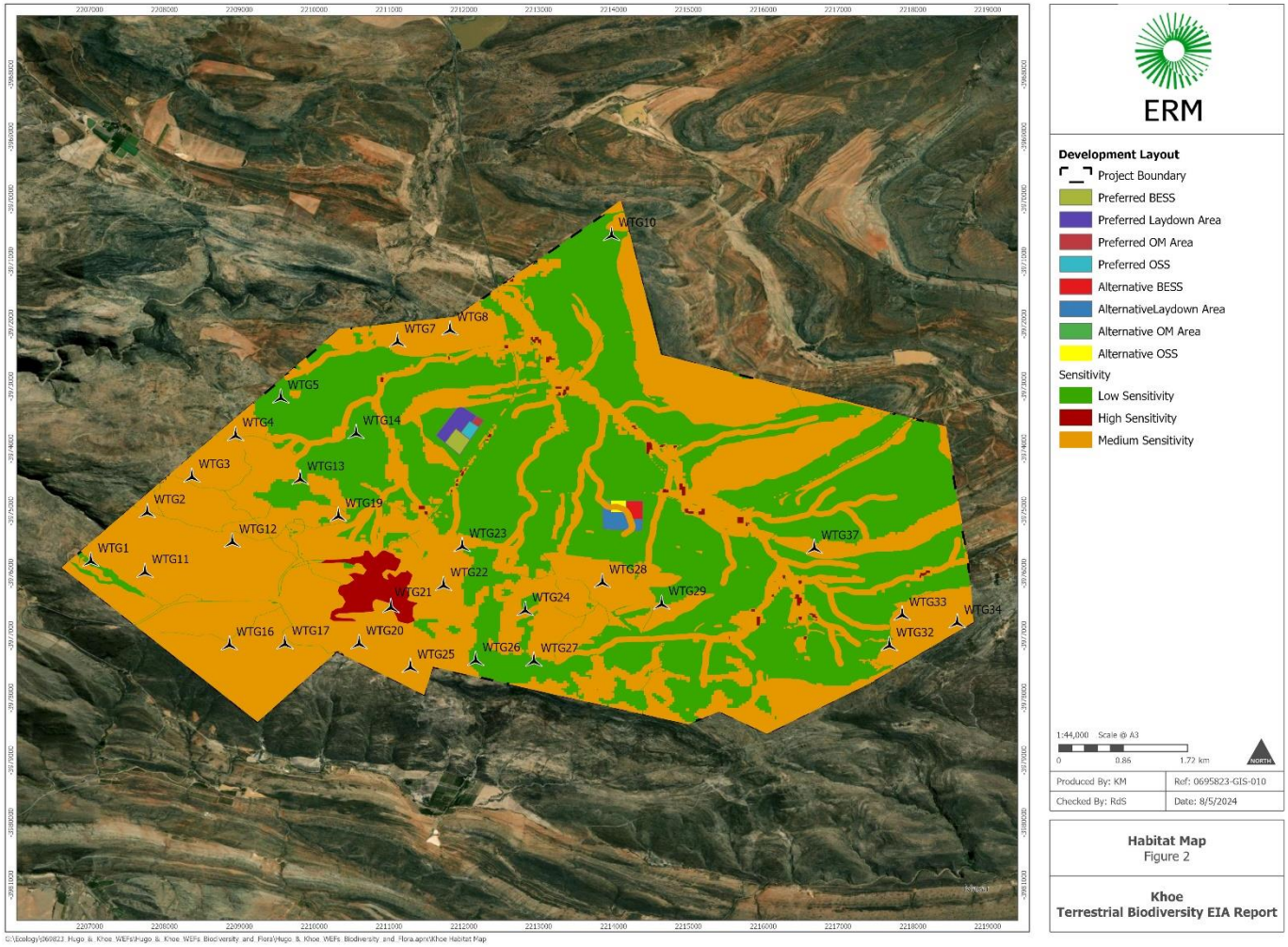
2. Development activities of medium impact acceptable followed by appropriate restoration activities.
3. Monitor regularly for erosion and mitigate immediately when identified.
4. Monitor regularly for alien invasive species and remove immediately when detected.

TABLE 7: SITE ECOLOGICAL IMPORTANCE OF SOUTH LANGEBERG SANDSTONE FYNBOS.

Conservation Importance (CI): High
Highly likely occurrence of CR, EN and/or VU species that have a global EOO >10 km^2 (Table 3).
Functional Integrity (FI): Medium
Medium (5-20 ha) area of good natural connectivity.
Biodiversity Importance (BI): Medium
Receptor Resilience (RR): High
Habitat can recover relatively quickly (5-10 years) to restore >75 % of the original species due to good habitat connectivity.
Site Ecological Importance (SEI): Low
Implications for Solar Energy mitigation:
1. Minimisation and restoration mitigation.
2. Development activities of medium to high impact acceptable followed by appropriate restoration activities.
3. Monitor regularly for erosion and mitigate immediately when identified.
4. Monitor regularly for alien invasive species and remove immediately when detected.

The site sensitivity in relation to the developer's final EIA layout is mapped using the SEIs above in conjunction with satellite imagery and specialist opinion. The site ecological importance map (Figure 5) in the Plant Species Theme has informed the site's sensitivity. High Sensitivity areas have been classified as 'No Go' due to the presence of a highly sensitive floral species. Medium sensitivity areas can undergo a certain limit of habitat loss, provided the underlying ecological processes are not impacted and stringent mitigations are adhered to. No turbines are recommended to be placed within highly sensitive areas on the site.

FIGURE 5: SITE ECOLOGICAL IMPORTANCE MAP FOR THE PROPOSED KHOE WIND ENERGY FACILITY IN THE PLANT SPECIES THEME.



4. IMPACT ASSESSMENT

WEFs have the potential to impact floral communities directly through vegetation clearing, enhancement of poaching opportunities, and indirectly through habitat fragmentation resulting in landscape modifications[17]. Direct and indirect impacts are anticipated and even expected for all phases of the development, namely construction, operational and decommissioning. An impact assessment was needed to thoroughly assess the anticipated impacts associated with each phase of the development.

4.1 CONSTRUCTION PHASE AND DECOMMISSIONING PHASE

The impacts that will be most prevalent during the Construction Phase of the proposed Khoe WEF are:

- Vegetation Clearing
- Chemical Contamination
- Altered Flow Regimes
- Mortality

The anticipated impacts during the Decommissioning Phase of the proposed Khoe WEF mirror those expected during the construction phase. Decommissioning activities are foreseen to take a similar amount of time as construction activities. However, they primarily involve dismantling the structures that were previously erected for the development. The impacts that will be most prevalent during the Decommission Phase of the proposed Khoe WEF are:

- Vegetation Clearing
- Mortality

4.1.1 IMPACT: VEGETATION CLEARING

Plants are vital in maintaining ecosystem function and integrity and play a key role in the determination of species abundance and distribution. The baseline environment will undergo vegetation clearing as a result of the development and associated infrastructure. WEFs are less invasive in terms of land-use modification as compared to solar farms and would require minimal vegetation clearing, leaving behind a good matrix of natural flora intact[18]. However, up to 100ha of natural land will be modified for the construction and decommissioning phase and this may have adverse impacts if not managed effectively. The impacts associated with vegetation clearing for the development is moderate before mitigation measures are applied (Table 8).

TABLE 8: ASSESSMENT OF POTENTIAL VEGETATION CLEARING IMPACTS ASSOCIATED WITH THE CONSTRUCTION AND DECOMMISSION PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Construction/ Decommissioning

[17] Urziceanu, M., Anastasiu, P., Rozylowicz, L. and Sesan, T.E., 2021. Local-scale impact of wind energy farms on rare, endemic, and threatened plant species. PeerJ, 9, p.e11390.
[18] Keehn, J.E. and Feldman, C.R., 2018. Disturbance affects biotic community composition at desert wind farms. Wildlife Research, 45(5), pp.383-396.

Nature of the impact: Potential vegetation clearing impacts associated with the construction and decommissioning phase of the proposed development

Description of Impact: Certain areas will need to be cleared of vegetation to facilitate construction of associated infrastructure and transport of personnel on site. This impact can negatively affect endemic, threatened or important flora species.

Impact Status: Negative

	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Medium Term	Recoverable	Moderate	Highly Probable
Score	2	3	3	3	4
With Mitigation	Site	Short Term	Recoverable	Low	Probable
Score	1	2	3	2	3

Significance Calculation	**Without Mitigation**	**With Mitigation**
S=(E+D+R+M)*P	Moderate Negative Impact (44)	Low Negative Impact (24)
Was public comment received?	NO	
Has public comment been included in mitigation measures?	NO	

Mitigation measures to reduce residual risk or enhance opportunities:

- The development footprint must avoid No-Go/ High Sensitivity areas as much as possible.
- Limit the area of impact as much as possible.
- A pre-construction walkthrough during the optimal flowering period (spring) of the finalized development layout must be conducted to ensure that No-Go and High Sensitivity areas are avoided where possible.
- Ensure that lay-down and other temporary infrastructure are within Low Sensitivity areas.
- Rehabilitate disturbed areas that are not required by the operational phase of the development.
- All construction staff on site must attend an environmental induction to ensure that basic environmental principles are adhered to. This includes topics such as avoiding fire hazards, no littering, appropriate handling of pollution and chemical spills, remaining within demarcated construction areas, avoidance of No-Go areas and sensitive habitats etc.
- Demarcate sensitive areas near the development footprint as no-go areas with construction tape or similar and clearly marked as No-Go areas.
- An environmental management programme (EMPr) must be implemented and must provide a detailed description of how construction activities must be conducted to reduce unnecessary clearing and/or destruction of habitat.

Residual impact	*Residual impacts are expected to occur for the area and may be relevant in soil erosion and alien invasive species establishing themselves before natural flora can. All mitigation measures would need to be adhered to and continuous monitoring and maintenance is required after construction.*

4.1.2 IMPACT: CHEMICAL CONTAMINATION

Chemical contamination can significantly impact the receiving environment due to construction activities. Studies at an upland wind farm highlighted the presence of contaminants like heavy metals (copper, chromium, zinc, aluminium, manganese) and bacteria in sediments and water[19]. Similar contaminants can lead to pollution and affect sediment quality. Other characteristics of water that can be impacted include pH and alkalinity. Chemical contamination can result from construction activities, waste disposal, and runoff, potentially degrading water quality and harming aquatic ecosystems and the terrestrial flora that depend on these aquatic sources on site. Monitoring and managing chemical contamination is crucial to mitigate adverse effects on the receiving environment. The assessment of chemical contamination impacts is assessed in Table 9.

TABLE 9: ASSESSMENT OF THE POTENTIAL CHEMICAL CONTAMINATION IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Construction					
Nature of the impact: Potential chemical contamination impacts associated with the construction phase of the proposed development.					
Description of Impact: Chemical contamination during the Construction phase. Spillage of construction materials or chemicals can adversely impact waterbodies and the flora on which they depend.					
Impact Status: Negative					
	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Medium term	Recoverable	High	Highly Probable
Score	2	3	3	4	4
With Mitigation	Site	Short Term	Recoverable	Moderate	Probable
Score	1	2	3	3	3
Significance Calculation	**Without Mitigation**		**With Mitigation**		
S=(E+D+R+M)*P	Moderate Negative Impact (48)		Low Negative Impact (27)		
Was public comment received?	NO				
Has public comment been included in mitigation measures?	NO				

Mitigation measures to reduce residual risk or enhance opportunities:

- The development footprint must avoid High Sensitivity areas as much as possible.
- Ensure proper storage and handling of chemicals (fuel, lubricants, cleaning agents) used on-site. Store all chemicals in designated areas equipped with spill containment measures to prevent leaks and spills.

[19] Millidine, K.J., Malcolm, I.A., McCartney, A., Laughton, R., Gibbins, C.N. and Fryer, R.J., 2015. The influence of wind farm development on the hydrochemistry and ecology of an upland stream. Environmental monitoring and assessment, 187, pp.1-17.

- A chemical spill response plan must be developed before construction activities are undertaken. This spill response plan must be implemented by an ECO on site.
- Provide appropriate training to construction staff on the safe handling of chemical and hazardous materials.
- Implement measures to prevent runoff to nearby waterbodies by installing sediment traps and/or containment pods. This should be addressed in the Stormwater Assessment.

Residual impact	*Residual impacts are expected to occur for the area and may be relevant in aquatic systems on site as well as soil cover. The use of chemicals on site should be limited as far as possible and environmentally friendly alternatives should be utilized, resulting in no major residual impacts associated with the phase.*

4.1.3 IMPACT: ALTERED FLOW REGIME

Construction activities can potentially lead to altered water flow due to increased surface runoff caused by vegetation clearing. Altered water regimes can create more favourable conditions for alien invasive species, thus negatively impacting native flora who are not able to compete in a new environment fast enough. Adequate flow and erosion management mitigations would need to be addressed in the EMPr.

TABLE 10: ASSESSMENT OF THE POTENTIAL ALTERED FLOW REGIME IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Construction					
Nature of the impact: Potential altered flow regime impacts associated with the construction phase of the proposed development.					
Description of Impact: Construction of infrastructure may alter water flow characteristics such as runoff, sedimentation and infiltration. These could change vegetation community composition, soil depth, and habitat suitability over time.					
Impact Status: Negative					
	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Medium term	Recoverable	High	Highly Probable
Score	2	3	3	4	4
With Mitigation	Site	Short Term	Recoverable	Moderate	Probable
Score	1	2	3	3	3
Significance Calculation	**Without Mitigation**		**With Mitigation**		
S=(E+D+R+M)*P	Moderate Negative Impact (48)		Low Negative Impact (27)		
Was public comment received?	NO				
Has public comment been included in mitigation measures?	NO				
Mitigation measures to reduce residual risk or enhance opportunities:					
• Adequate flow and erosion control measures should be included in the EMPr.					

- Ongoing monitoring and rehabilitation of disturbed areas must be implemented.
- All recommendations in the Stormwater Assessment must be strictly adhered to.

Residual impact	*Vegetation clearing may impact runoff and infiltration rates. As a result, residual impacts may occur after mitigation measures have been applied, but these impacts are manageable.*

4.1.4 IMPACT: MORTALITY OF FLORA

Construction activities can have significant implications for local plant populations. Increased traffic and human presence, coupled with illegal collection pose direct threats to various flora species. The following impact table outlines the potential risks associated with these factors and suggests mitigation measures to minimize adverse effects on biodiversity during the construction and decommissioning processes.

TABLE 11: ASSESSMENT OF THE POTENTIAL MORTALITY OF FLORA SPECIES DUE TO DIRECT AND INDIRECT IMPACTS ASSOCIATED WITH THE CONSTRUCTION/DECOMMISSION PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Construction/ Decommissioning

Nature of the impact: Potential mortality of flora species due to direct and indirect impacts associated with the construction and decommissioning phase of the proposed development.

Description of Impact: Direct mortality due to increased traffic and illegal collection/poaching/entrapment, and indirect mortality due to potential increased herbivore presence and decreased detection can occur during the Construction and Decommissioning Phase.

Impact Status: Negative

	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Long term	Irreversible	Very High	Highly Probably
Score	2	4	5	5	4
With Mitigation	Site	Medium term	Recoverable	Moderate	Probable
Score	1	3	3	3	3
Significance Calculation	**Without Mitigation**			**With Mitigation**	
S=(E+D+R+M)*P	**High Negative Impact (64)**			Low Negative Impact (30)	
Was public comment received?	NO				
Has public comment been included in mitigation measures?	NO				

Mitigation measures to reduce residual risk or enhance opportunities:

- No movement of construction vehicles between dusk and dawn.
- Induction toolbox talk to construction personnel to increase awareness about flora SCCs present.
- No unauthorized movement of personnel.
- No unauthorized access to the construction site.

- A Plant Rescue and Rehabilitation Plan must be designed before construction takes place and implemented during all phases of the project lifecycle.

Residual impact	*Residual impacts include direct mortality of species of conservation concern as a result of activities associated with the WEF.*

4.2 OPERATIONAL PHASE

The anticipated impacts for the operational phase of the proposed development are:

- Potential Encroachment of Alien Invasive Species
- Flora Mortality and Loss of SCC
- Soil erosion
- Unwanted Fires

Their significance with and without the recommended mitigation measures are assessed in the tables below.

4.2.1 IMPACT: ENCROACHMENT OF ALIEN INVASIVE SPECIES

The clearing and disturbance of areas during the construction phase of the project can result in an increased and ongoing risk of invasion of alien plant species, particularly pioneer species. Nine invasive plant species have been identified within the Khoe WEF PAOI during the specialist site visit (listed below). It must be noted that more invasive species may be present on site but were not detected.

NEMBA Category 1b invasives: Must be controlled or eradicated as far as possible

Arundo donax is a giant reed and has the potential to narrow water channels when it invades watercourses. It also occurs along roadsides. This invasive is a category 1b and must be controlled or removed from areas where possible.

Cirsium vulgare (Spear Thistle) is known to establish itself along disturbed riverbanks, vleis and dam margins. They are Category 1b invasive.

Eucalyptus cladocalyx was identified in a drainage area with undulating hills. This species is known to invade and establish itself in Fynbos gaps and watercourses.

Pinus pinaster and *Pinus radiata* was found within the Matjiesfontein Shale Renosterveld low shrubland. These invasives are known to invade lowland fynbos and mountain slopes.

Trichocereus spachianus (torch cactus) typically invades dry karoo and/or savanna areas.

Opuntia sp. was detected on a low shrubland vegetation survey at the proposed development. This species invades dry grassland, but also invades rocky slopes and riverbanks. The species was found near a drainage line intersection.

NEMBA Category 2 invasives: Requires monitoring in order to effectively control populations

Acacia mearnsii (Black Wattle) is known to invade roadsides and watercourses and has the potential to invade and degrade riparian habitat. This invasive is listed as a Category 2 invasive

species according to NEMBA, and requires ongoing monitoring and management, as it is not a widely distributed invasive[20].

Atriplex nummularia invades sandy riverbeds, edges of pans and roadsides. This species must be contained and controlled and requires ongoing monitoring.

NEMBA Category 3 invasives: Requires population control within riparian areas

Agave americana originates from Mexico and invades drainage lines and dry habitats. It is a category 3[21] invasive in the Western Cape and must be controlled within riparian areas.

Regular alien clearing activities would be required, particularly during the initial stages of the operational phase to limit the spread of alien species. Once the natural vegetation has re-established in previously disturbed areas then the level of alien control required would likely be reduced.

TABLE 12: ASSESSMENT OF POTENTIAL ENCROACHMENT OF ALIEN INVASIVE SPECIES RESULTING IN LOSS OF FLORA SCC ASSOCIATED WITH THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Operation					
Nature of the impact: Potential encroachment of alien invasive species resulting in loss of flora SCC associated with the operational phase of the proposed development.					
Description of Impact: Movement of personnel, and increased disturbance puts the proposed development area at greater risk of alien invasive species moving into and spreading within the area. Alien invasive species will encroach into disturbed areas left behind by construction activities and may go undetected during the operational phase. This impact results in the potential loss of flora SCC or endemic species.					
Impact Status: Negative					
	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Long term	Irreversible	High	Definite
Score	2	4	5	5	5
With Mitigation	Site	Medium term	Recoverable	Moderate	Low Probability
Score	1	3	3	3	2
Significance Calculation	**Without Mitigation**		**With Mitigation**		
S=(E+D+R+M)*P	**High Negative Impact (80)**		Low Negative Impact (20)		
Was public comment received?	NO				

[20] Henderson, L., Plant Protection Research Institute Handbook No. 21. Agricultural Research Council.
[21] Department of Environment, Forestry and Fisheries (South Africa). 2018. National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004): Alien and Invasive Species Lists. (Notice 1003). Government Gazette, 43726, p.31, 18 September.

Has public comment been included in mitigation measures?	NO

Mitigation measures to reduce residual risk or enhance opportunities:

- Disturbed areas such as road verges, lay-down areas and areas utilised by temporary construction facilities must be regularly monitored to detect the establishment of alien species and those species should be eradicated before they spread.
- Regular alien clearing should be conducted, as needed, using the best-practice methods for the species concerned, the use of herbicides should be avoided as far as possible.
- The use of herbicides (if absolutely required) for the control and eradication of alien grasses should be done in accordance with the alien eradication programme in the EMPr to reduce unintended ecological impacts.

Residual impact	*Residual impacts include loss of natural flora and suitable habitat due to encroachment of alien invasive species.*

4.2.2 IMPACT: UNWANTED FIRES

Although the Fynbos biome relies on fire and is susceptible to fires, unwanted or frequent and intense fires can cause vegetation loss. These fires can surpass the ecosystem's natural ability to recover, leading to habitat loss and fragmentation. This affects fauna species and has negative effects on all levels of the local ecosystem. Essential ecological processes such as nutrient cycling and soil structure can also be affected. Additionally, fires can create conditions that are favorable for invasive alien species to invade. Furthermore, fires can negatively impact infrastructure and personnel. The impact significance is rated as Moderate before mitigation measures are implemented.

TABLE 13: ASSESSMENT OF POTENTIAL FIRE IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Operation					
Nature of the impact: Potential fire impacts associated with the operational phase of the proposed development.					
Description of Impact: Increased personnel on site increases the fire risk due to smoking and/or use of electrical equipment on site.					
Impact Status: Negative					
	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Long term	Irreversible	High	Highly Probably
Score	2	4	5	4	4
With Mitigation	Site	Medium term	Recoverable	Moderate	Probable
Score	1	3	3	3	3
Significance Calculation	**Without Mitigation**		**With Mitigation**		
S=(E+D+R+M)*P	Moderate Negative Impact (60)		Low Negative Impact (30)		

Was public comment received?	NO
Has public comment been included in mitigation measures?	NO

Mitigation measures to reduce residual risk or enhance opportunities:

- No open fires should be permitted outside of designated areas.
- Smoking areas must be defined, and no smoking should be permitted outside of designated areas.
- An emergency response plan for uncontrolled fires must be in place prior to operation and implemented for the duration of the WEF's lifespan.
- All staff members must have a Fire and Safety induction to increase awareness.

Residual impact	*Residual impacts include loss of flora SCC. This is why it is critical to manage unplanned fires as soon as possible to avoid mortality.*

4.2.3 IMPACT: MORTALITY OF FLORA

Floral communities face direct mortality due to increased traffic and human presence, coupled with illegal collection. The wind farm should implement operational vegetation monitoring to understand and compare post-construction impacts with baseline (pre-construction) conditions. This will help create an adaptive management approach to effectively managing direct mortality to terrestrial floral communities. The following impact table outlines the potential risks associated with these factors and recommended mitigation measures to minimize adverse effects on vegetation during the operational phase. The impacts of direct mortality is Moderate before mitigation measures are implemented. Extreme loss of species impacts biodiversity and the ecological processes that helps keep localized communities intact and ecosystems functioning.

TABLE 14: ASSESSMENT OF POTENTIAL FLORAL MORTALITY AND LOSS OF SCC IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Operation					
Nature of the impact: Potential floral mortality and loss of SCC impacts associated with the operational phase of the proposed development.					
Description of Impact: Direct mortality/loss of flora species is anticipated due to increased traffic on site and illegal collection. Targeted illegal harvesting may pose a risk as the WEF may offer greater ease of access to the public.					
Impact Status: Negative					
	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Long term	Irreversible	High	Highly Probable
Score	2	4	5	4	4
With Mitigation	Site	Medium term	Recoverable	Moderate	Low Probability
Score	1	3	3	3	2
Significance Calculation	**Without Mitigation**		**With Mitigation**		

S=(E+D+R+M)*P	Moderate Negative Impact (60)	Low Negative Impact (20)
Was public comment received?	NO	
Has public comment been included in mitigation measures?	NO	

Mitigation measures to reduce residual risk or enhance opportunities:

- An environmental induction for all staff on site to identify SCC.
- Demarcate sensitive areas, where SCC have been confirmed present near the development footprint as No-Go areas.
- Site access should be controlled, and no unauthorised persons should be allowed onto the site to limit illegal harvesting.
- The collection or harvesting of any plants at the site should be strictly forbidden.
- Establish a monitoring program to assess the effectiveness of mitigation measures and track changes in floral communities over time. Use the results of monitoring to inform adaptive management strategies and make adjustments as needed to minimize direct floral mortality and optimize conservation outcomes.

Residual impact	*Residual impacts include loss flora SCC from the natural environment.*

Disturbance created during construction would leave the disturbed areas vulnerable to soil erosion in the operational phase. Consequently, specific measures such as erosion berms and water dispersion features will be required along the power line, access roads and servitudes. Although this impact has a moderate significance before mitigation, it can be effectively mitigated against through the maximum use of existing access roads and servitudes and the implementation of erosion control measures. The significance of this impact after the implementation of mitigation measures is therefore considered to be low.

TABLE 15: ASSESSMENT OF POTENTIAL SOIL EROSION IMPACTS ASSOCIATED WITH THE OPERATIONAL PHASE OF THE PROPOSED DEVELOPMENT.

Impact Phase: Operation					
Nature of the impact: Potential soil erosion impacts associated with the operational phase of the proposed development.					
Description of Impact: Soil erosion facilitated by clearing vegetation and increased road use promotes soil displacement and loss during the Operational Phase.					
Impact Status: Negative					
	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Long term	Irreversible	High	Highly Probably
Score	2	4	5	4	4
With Mitigation	Site	Medium term	Recoverable	Moderate	Low Probability
Score	1	3	3	3	2

Significance Calculation	Without Mitigation	With Mitigation
S=(E+D+R+M)*P	Moderate Negative Impact (60)	Low Negative Impact (20)
Was public comment received?	NO	
Has public comment been included in mitigation measures?	NO	

Mitigation measures to reduce residual risk or enhance opportunities:

- Utilize existing servitudes and access roads wherever possible, any new roads or the upgrading of roads should be minimized as far as possible and not be larger than required.
- All construction vehicles should adhere to clearly defined and demarcated roads, no off-road driving should be allowed.
- Ensure that sufficient erosion control measures are constructed on all servitudes and access roads in the project area, including where such crosses waterbodies.
- Rehabilitate existing servitude and access roads in the project area with sufficient erosion control measures to prevent the loss of soil and the degradation of vegetation.
- Construction activities in or near drainage lines, washes or temporary inundated depressions must only take place during the dry season.
- An environmental management programme (EMPr) must be implemented and must provide a detailed description of how construction activities must be conducted to avoid increased erosion.
- Erosion management at the site should take place according to the Erosion Management Plan and Rehabilitation Plan included in the EMPr.
- All roads and other hardened surfaces should have runoff control features which redirect water flow and dissipate energy in the water stream which may pose an erosion risk.
- Regular monitoring for erosion after construction to ensure that no erosion problems have developed as result of the disturbance during the operation of the project.

Residual impact	*Residual impacts include changes to infiltration rates and loss of soil fertility.*

4.3 CUMULATIVE IMPACTS

The primary cumulative impact anticipated for the proposed WEF is changes to broad-scale ecological processes. According to the South African Renewable Energy EIA Application Database (2023, Q4), there are five solar Photovoltaic developments within a 30 km radius of the proposed Khoe WEF, with no Wind Energy Farms considered within the same radius (Figure 6). Solar facilities typically involve more invasive vegetation clearing compared to WEFs. Consequently, this can lead to the loss of individual SCC and increased habitat fragmentation. Habitat fragmentation can reduce habitat connectivity and lead to changes in the dispersal of species, population isolation and reduced genetic diversity within landscapes. While the broad-scale impacts on habitat are concerning, it's noteworthy that the Fynbos biome is not listed as critically endangered. However, broad scale clearing of vegetation could lead to cascading effects in flow regimes, nutrient cycling, and energy flow which ultimately results in decreased biodiversity.

TABLE 16: ASSESSMENT OF POTENTIAL BR0AD-SCALE ECOLOGICAL CUMULATIVE IMPACTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT.

Impact Phase: Cumulative

Description of the Cumulative Impact: The consideration of five Solar Photovoltaic facilities within 30km of the proposed WEF brings about the potential of changes in broad-scale ecological processes brought on by vegetation clearing.

Impact Status: Negative

	E	**D**	**R**	**M**	**P**
Without Enhancement	Regional	Long Term	Recoverable	High	Highly Probable
Score	3	4	3	4	4
With Enhancement	Regional	Long term	Recoverable	Moderate	Low Probability
Score	3	4	3	3	2

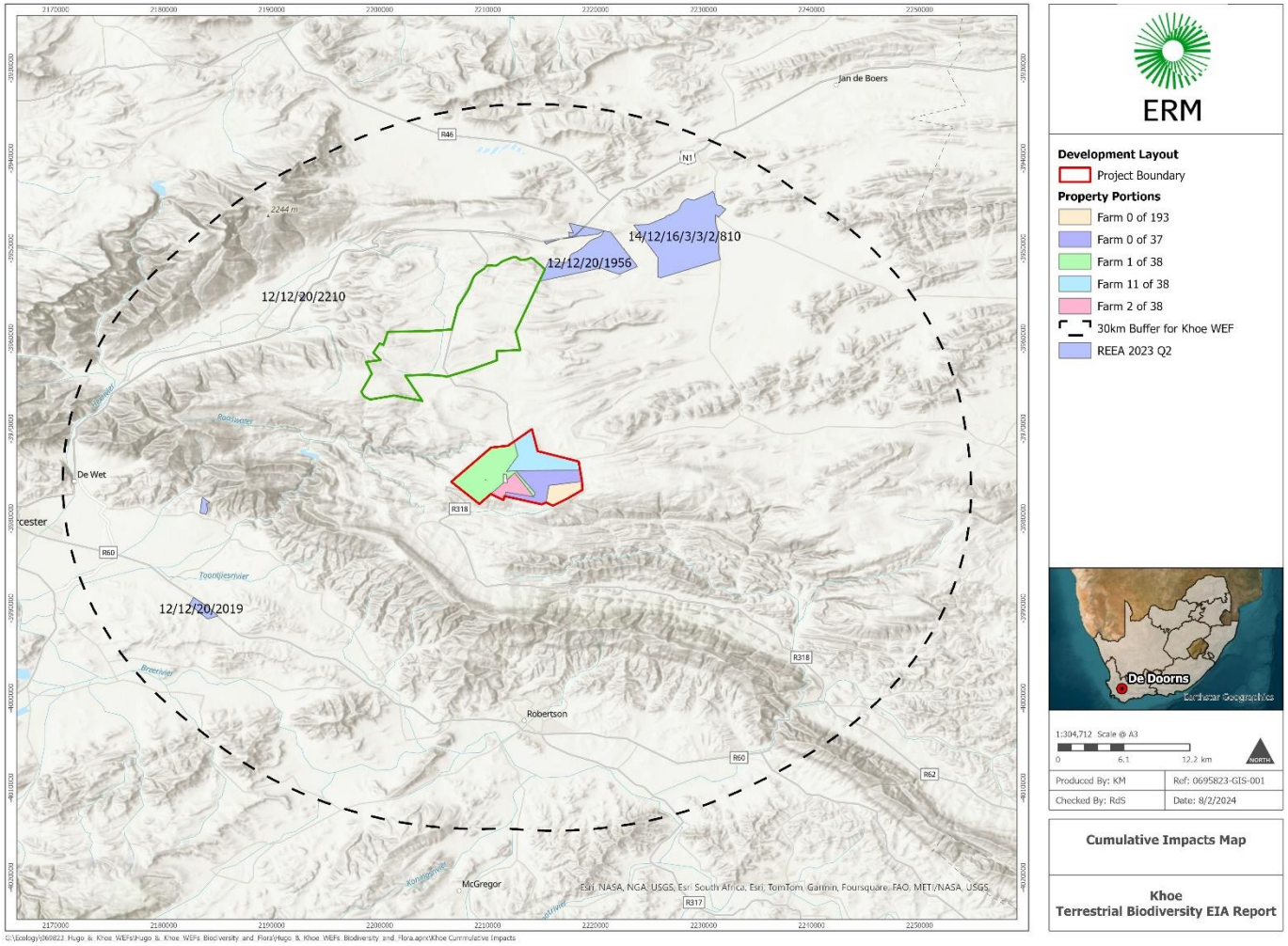
Significance Calculation	**Without Enhancement**	**With Enhancement**
S=(E+D+R+M)*P	Moderate Negative Impact (56)	Low Negative Impact (26)
Was public comment received?	NO	
Has public comment been included in mitigation measures?	NO	

Mitigation measures to reduce residual risk or enhance opportunities:

- Developers within the area should share baseline data and operational monitoring data to Interested and Affected Parties on a quarterly basis.
- All mitigations for the proposed development should be strictly adhered to avoid cumulative contributions.

Residual impact	*Proposed development unlikely to significantly contribute to broad-scale ecological impacts to flora in the area.*

FIGURE 6: THE PROPOSED KHOE WEF IN RELATION TO OTHER RENEWABLE ENERGY DEVELOPMENTS WITHIN A 30KM RADIUS



4.4 NO-GO ALTERNATIVE

The No-Go Alternative assumes that the proposed development described in Section 1.2 of this report does not proceed. In this case the proposed Khoe WEF PAOI will remain unchanged from its baseline condition and be subject to all extant impacts and those that may arise from changes in potential future land-use. Under the No-Go Alternative the potential contribution of the proposed Khoe WEF to meet growing renewable power demands will be directed into an alternative energy development (renewable/non-renewable) with its own distinct impacts on the local environment. Development of a non-renewable alternative will potentially have far-reaching implications on climate change. Therefore, the benefits of developing a WEF within the landscape outweigh the No-Go alternative or the alternative to develop a non-renewable energy source. In these instances, none of the opportunities listed below will be realized which includes impacted land being rehabilitated through the management of invasive species and enhancing local floral communities and habitats and engaging the local community through environmental awareness.

4.5 OPPORTUNITIES

Development of the proposed Khoe WEF in adherence with the prescribed mitigation measures presents several ecological opportunities. Avoiding No-Go and High Sensitivity areas the development will indirectly contribute to conservation efforts. Additionally, rehabilitating impacted Low Sensitivity areas following disturbance, and implementing pro-active alien invasive species management will potentially enhance biodiversity by improving local conditions and reducing undue competition for resources. Requiring on-site staff to attend an environmental induction the development indirectly contributes to local community engagement and education on environmental issues. By publishing environmental management progress reports (as should be prescribed in the anticipated EMPr) the development will contribute to local environmental monitoring and could potentially initiate research interests to better understand the impacts and mitigations for renewable energy developments in similar habitats.

5. CONCLUSION

The sensitivities presented in this assessment have been refined following the prescribed detailed site survey. The Sensitivities provided by the DFFE Online ST are a useful guideline, and the site's sensitivity has been verified against the EIA layout. The data collected to date suggests that the negative impacts to terrestrial biodiversity posed by the proposed development range from Moderate to Low with adherence to the recommended mitigation measures. Some mitigation measures involve avoiding highly sensitive areas, implementing ongoing biodiversity monitoring plans for various specialisms and to continuously adapt the EMPr throughout the development's operational lifecycle.

Mitigation recommendations are standard for wind energy developments, and provided these and considerations presented in the Botanical Specialist Assessment are met, the

development of the Khoe WEF will be compatible with conservation efforts in the area. For spatial planning purposes it is recommended that wind turbines be preferentially placed within modified and / or disturbed areas of cultivated lands.

It is the Specialist's opinion that the proposed Khoe WEF be considered for environmental authorization, provided all mitigation measures are adhered to.

APPENDIX A COMPREHENSIVE SITE ECOLOGICAL IMPORTANCE METHODOLOGY

Site Ecological Importance (SEI) is considered to be a function of the Biodiversity Importance (BI) of the receiving environment (e.g., species of conservation concern and the habitat type present on the site) and its resilience to impacts, or Receptor Resilience (RR). The BI of the receiving environment is in turn a function of the Conservation Importance (CI) and the Functional Integrity (FI) of the receiving environment. Conservation Importance is defined by the South African National Biodiversity Institute's Species Environmental Assessment Guidelines as:

"*The importance of a site for supporting biodiversity features of conservation concern present, e.g., populations of IUCN threatened and Near Threatened species (CR, EN, VU and NT), rare species, range restricted species, globally significant populations of congregatory species, and areas of threatened ecosystem types, through predominantly natural processes.*"

The CI assessment criteria are explained in Table 19 below.

TABLE 17: ASSESSMENT CRITERIA FOR CONSERVATION IMPORTANCE.

Conservation Importance	Criteria
Very High	▪ Confirmed or highly likely occurrence of CR, EN, VU or Extremely Rare of Critically Rare species that have a global extent of occurrence (EOO) < 10 km^2; ▪ Any area of natural habitat of a CR ecosystem type or large (>0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type; and ▪ Globally significant populations of congregatory species (>10% of the global population).
High	▪ Confirmed or highly likely occurrence of CR, EN, VU species that have a global EOO of >10 km2. IUCN threatened species (CR, EN, VU) must be listed under any Criterion other than A. If listed as threatened only under Criterion A, include if there are less than 10 locations or < 10 000 mature individuals remaining; ▪ Small area (>0.01% but <0.1%) of the total ecosystem type extent of natural habitat of EN

	ecosystem type, or large area (>0.1%) of natural habitat of VU ecosystem type; ▪ Presence of Rare species; and ▪ Globally significant populations of congregatory species (>1% but <10% of global population).
Medium	▪ Confirmed or highly likely occurrence of populations of NT species, threatened species (CR, EN, VU) listed under Criterion A only and which have more than 10 locations or more than 10 000 mature individuals; ▪ Any area of natural habitat of threatened ecosystems type with status VU; ▪ Presence of range restricted species; and ▪ >50% of receiving environment contains natural habitat with potential to support SCC.
Low	▪ No confirmed or highly likely occurrence of SCC; ▪ No confirmed or highly likely occurrence of range-restricted species; and ▪ <50% of the receiving environment contains natural habitat with potential to support SCC.
Very Low	▪ No confirmed and highly unlikely occurrence of SCC; ▪ No confirmed and highly unlikely populations of range-restricted species; and ▪ No natural habitat remaining.

Functional Integrity (FI) of the receiving environment/habitats is defined as its current ability to maintain the structure and functions that define it, compared to its known or predicted state under ideal conditions i.e. a measure of the ecological condition of the receiving environment as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts. The degree of connectivity between habitat patches varies greatly with the dispersal ability of the taxon or taxon group in question, similarly existing impacts will have differential effects on each species. The FI assessment criteria are described in Table 20 below.

TABLE 18: ASSESSMENT CRITERIA FOR FUNCTIONAL INTEGRITY.

Functional Integrity	Criteria
Very High	▪ Very large (>100 ha) intact area for any conservation status of ecosystem, or >5 ha CR ecosystem types; ▪ High habitat connectivity serving as functional ecological corridors, limited road network between intact habitat patches; and ▪ No or minimal current negative ecological impacts with no sins of major past disturbance (e.g., ploughing).

High	▪ Large (>20 ha but <100 ha) intact area for any conservation status of ecosystem type, or >10 ha for EN ecosystem type; ▪ Good habitat connectivity with potentially functional ecological corridors and a regularly used road network between intact habitat patches; and ▪ Only minor current negative ecological impacts (e.g., few livestock utilising area) with no signs of major past disturbance (e.g., ploughing) and good rehabilitation potential.
Medium	▪ Medium (>5 ha but <20 ha) semi-intact area for any conservation status of ecosystem type or >20 ha for VU ecosystem types; ▪ Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy road network between intact patches; and ▪ Mostly minor current negative ecological impacts with some major impacts (e.g., established population of alien and invasive flora) and a few signs of minor past disturbance. Moderate rehabilitation potential.
Low	▪ Small (>1 ha but <5 ha) area; ▪ Almost no habitat connectivity but migrations still possible across some modified or degraded natural habitat and a very busy road network surrounds the area. Low rehabilitation potential; and ▪ Several minor and major negative ecological impacts.
Very Low	▪ Very small (<1 ha) area; ▪ No habitat connectivity except for flying species or flora with wind-dispersed seeds; and ▪ Several major current negative ecological impacts.

As BI is a function of CI and FI, it can be determined as in Table 21 below.

TABLE 19: DETERMINING BIODIVERSITY IMPORTANCE AS A FUNCTION OF CONSERVATION IMPORTANCE AND FUNCTIONAL INTEGRITY.

Biodiversity Importance (BI)		**Conservation Importance (CI)**				
		Very High	**High**	**Medium**	**Low**	**Very Low**
Functional Integrity (FI)	**Very High**	**Very High**	**Very High**	**High**	**Medium**	**Low**
	High	**Very High**	**High**	**Medium**	**Medium**	**Low**
	Medium	**High**	**Medium**	**Medium**	**Low**	**Very Low**
	Low	**Medium**	**Medium**	**Low**	**Low**	**Very Low**
	Very Low	**Medium**	**Low**	**Very Low**	**Very Low**	**Very Low**

Receptor Resilience (RR) is the intrinsic capacity of the receiving environment to resist major damage from an impact and/or to recover to its original state with limited or no human intervention. Resilience can be linked to a particular disturbance/impact or time of year, e.g., large birds of prey have different levels of resilience to noise disturbance depending on whether they are breeding or not. The RR assessment criteria are described in Table 22 below.

TABLE 20: ASSESSMENT CRITERIA FOR RECEPTOR RESILIENCE.

Receptor Resilience	Criteria
Very High	Habitat that can recover rapidly (± less than 5 years) to restore >75 % of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of remaining at a site even when disturbance or impact is occurring, or species that have a very high likelihood of returning to a site once the disturbance or impact has been removed.
High	Habitat that can recover relatively quickly (± 5-10 years) to restore >75 % of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of remaining at a site even when disturbance or impact is occurring, or species that have a high likelihood of returning to a site once the disturbance or impact has been removed.
Medium	Will recover slowly (± more than 10 years) to restore >75 % of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of remaining at a site even when disturbance or impact is occurring, or species that have a moderate likelihood of returning to a site once the disturbance or impact has been removed.
Low	Habitat that is unlikely to be able to recover fully after a relatively long period: >15 years required to restore ± 50% of the original species composition and functionality of the receptor functionality, or species that have a low likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a low likelihood of returning to a site once the disturbance or impact has been removed.
Very Low	Habitat that is unable to recover from major impacts, or species that are unlikely to remain at a site even when disturbance or impact is occurring, or species that are unlikely to

	return to a site once the disturbance or impact has been removed.

Guidelines to interpret Site Ecological Importance (SEI) in the context of the proposed development guidelines are presented in Table 2, Section 2.3 of this report.

APPENDIX B COMPREHENSIVE IMPACT ASSESSMEMT AND MITIGATION METHDOLOGY

SPECIALIST REPORTING REQUIREMENTS

The Specialist EIA Report must comply with the requirement of GN 43110 of NEMA: Environmental Themes Reporting Criteria and the Relevant Protocols Gazetted, unless no protocol is prescribed, then the Appendix 6 of the EIA Regulations, 2014 (as amended), must be followed, as well as other relevant protocols, guidelines, policies and/or plans.

The specialist report will include the specialist impact assessment of the proposed developments. The terms of reference for specialist studies includes (but is not limited to):

- Site Visit
- Desktop Screening
- Mapping
- Sensitivity Analysis and/or modelling
- Submission of Shapefiles
- Defining the legal, planning and policy context,
- Description of the Baseline Environment
- Determination of potential impacts (direct, indirect, cumulative)
- Determination of residual risks
- Reporting
- Recommendation and input into project design
- Management Plan and/or Monitoring Programme for inclusion in the EMPr
- Sensitivity Verification Reporting in terms of GN 320 of 20 March 2020 and/or a Compliance Statement in terms of GN 320 / GN 1150 of 20 March 2020

IMPACT ASSESSMENT METHODOLOGY

The purpose of the assessment of impacts in an EIA is to evaluate the likely extent and overall significance that a potential impact may have on an identified receptor or resource. Another important aspect of the assessment of impacts is to quantify those impacts that are not scientific-based or evidence-based and include the opinions of others (i.e., the involvement and comment from I&APs).

A successful assessment of the potential significance of impacts will include the description and development of measures that will be taken to avoid, minimise or compensate for any adverse environmental impacts, to enhance positive impacts, and to report the significance of residual impacts that occur following mitigation.

A 7-step approach for the determination of significance of potential impacts was developed by ERM to align with the requirements of Appendix 3 of the EIA Regulations, 2014 (as amended). The approach is both objective and scientific based to allow appointed specialists and EAPs to retain independence throughout the assessment process.

ERM has adapted this 7-step approach from standard ranking metrics such as the Hacking Method, Crawford Method etc. The ERM 7-step approach complies with the method provided in the EIA guideline document (GN 654 of 2010) and

considers international EIA Regulatory reporting standards such as the newly amended European Environmental Impact Assessment (EIA) Directive (2014/52/EU).

The 7-Step approach for determining the significance of impacts pre, and post mitigation, is described below:

- **Step 1:** Predict potential impacts by means of an appraisal of:
  - Site Surveys,
  - Project-related components and infrastructure,
  - Activities related with the project life-cycle,
  - The nature and profile of the receiving environment and potential sensitive environmental features and attributes,
  - Input received during public participation from all stakeholders, and
  - The relevant legal framework applicable to the proposed development
- **Step 2**: Determination of whether the potential impacts identified in **Step 1** will be *direct* (caused by construction, operation, decommissioning or maintenance activities on the proposed development site or immediate surroundings of the site), *indirect* (not immediately observable or do not occur on the proposed development site or immediate surroundings of the site), *residual* (those impacts which remain after post mitigation) and *cumulative* (the combined impact of the project when considered in conjunction with similar projects in proximity).
- **Step 3:** Description and determination of the significance of the predicted impacts in terms of the criteria below to ensure a consistent and systematic basis for the decision-making process. Significance is numerically quantified on the basis score of the following impact parameters:
  1. ***Extent* (E)** of the impact: The geographical extent of the impact on a given environmental receptor.
  2. ***Duration* (D)** of the impact: The length of permanence of the impact on the environmental receptor.
  3. ***Reversibility* (R) of the impact**: The ability of the environmental receptor to rehabilitate or restore after the activity has caused environmental change
  4. ***Magnitude* (M)** of the impact: The degree of alteration of the affected environmental receptor.
  5. ***Probability* (P)** of the impact: The likelihood of the impact actually occurring.

A widely accepted numerical quantification of significance is the formula:

$$\underline{S=(E+D+R+M)*P}$$

Where: *Significance=(Extent+Duration+Reversibility+Magnitude) * Probability*

The following has also been considered when determining the significance of a potential impact.

6. **Nature (N)** of the impact: A description of what causes the effect, what will be affected, and how it will be affected.
7. **Status (S)** of the impact: described as either positive, negative or neutral
8. **Cumulative impacts**.

9. Inclusion of **Public comment.**

The significance of environmental impacts is determined and ranked by considering the criteria presented in the Table below. All criteria are rank according to 'Very Low', 'Low', 'Moderate', 'High' and 'Very High' and are assigned scores of 1 to 5 respectively.

Defining the significant in terms of the impact criteria.

Impact Criteria	Definition	Score	Criteria Description
Extent (E)	Site	1	Impact is on the site only
	Local	2	Impact is localized inside the activity area
	Regional	3	Impact is localized outside the activity area
	National	4	Widespread impact beyond site boundary. May be defined in various ways, e.g. cadastral, catchment, topographic
	International	5	Impact widespread far beyond site boundary. Nationally or beyond
Duration (D)	Immediate	1	On impact only
	Short term	2	Quickly reversible, less than project life. Usually up to 5 years.
	Medium term	3	Reversible over time. Usually between 5 and 15 years.
	Long term	4	Longer than 10 years. Usually for the project life.
	Permanent	5	Indefinite
Magnitude (M)	Very Low	1	No impact on processes
	Low	2	Qualitative: Minor deterioration, nuisance or irritation, minor change in species/habitat/diversity or resource, no or very little quality deterioration. Quantitative: No measurable change; Recommended level will never be exceeded.
	Moderate	3	Qualitative: Moderate deterioration, discomfort, Partial loss of habitat /biodiversity /resource or slight or alteration. Quantitative: Measurable deterioration; Recommended level will occasionally be exceeded.
	High	4	Qualitative: Substantial deterioration death, illness or injury, loss of habitat /diversity or resource, severe alteration or disturbance of important processes. Quantitative: Measurable deterioration; Recommended level will often be exceeded(e.g. pollution)
	Very High	5	Permanent cessation of processes

Impact Criteria	Definition	Score	Criteria Description
Reversibility (R)	Reversible	1	Recovery which does not require rehabilitation and/or mitigation.
	Recoverable	3	Recovery which does require rehabilitation and/or mitigation.
	Irreversible	5	Not possible, despite action. The impact will still persist, and no mitigation will remedy or reverse the impact.
Probability (P)	Improbable	1	Not likely at all. No known risk or vulnerability to natural or induced hazards
	Low Probability	2	Unlikely; low likelihood; Seldom; low risk or vulnerability to natural or induced hazards
	Probable	3	Possible, distinct possibility, frequent; medium risk or vulnerability to natural or induced hazards.
	Highly Probable	4	Highly likely that there will be a continuous impact. High risk or vulnerability to natural or induced hazards
	Definite	5	Definite, regardless of prevention measures.

The *significance* (s) of potential impacts identified according to the criteria above has been colour coded for the purpose of comparison. This colour coding will be used in impact tables.

Significance is deemed Negative (-)			Significance is deemed Positive (+)		
0 - 30	**31 - 60**	**61 - 100**	**0 - 30**	**31 - 60**	**61 - 100**
Low	**Moderate**	**High**	**Low**	**Moderate**	**High**

- **Step 4:** Determination of practical and reasonable mitigation measures based on specialists' inputs and field observations following the mitigation hierarchy (avoid, minimise, manage, mitigate, or rehabilitate).
- **Step 5:** Evaluation of predicted residual impacts after implementation of mitigation measures.
- **Step 6:** Determination of the significance of the impact taking into consideration the predicted residual impacts after implementation of mitigation measures.
- **Step 7:** Based on an acceptable significance of the impact, determination of the need and desirability of the proposed development and an opinion as to whether the development should proceed or not.

The Assessment of the significance of potential impacts is then populated in an Impact Summary Table.

IMPACT SUMMARY TABLE

Please copy the below table into your reports for any impact assessments required.

Impact Phase: Detail if the impact will take place during Construction/ Operation/Decommissioning					
Nature of the impact: Name of impact					
Description of Impact: Detailed description of impact xxxx …					
Impact Status: Detail of the impact is Positive, Neutral or Negative					
	E	**D**	**R**	**M**	**P**
Without Mitigation	Local	Medium Term	x	x	x
Score	2	3	x	x	x
With Mitigation	Site	Short Term	x	x	x
Score	1	2	x	x	x
Significance Calculation	**Without Mitigation**		**With Mitigation**		
S=(E+D+R+M)*P	Moderate Negative Impact (42)		Low Negative Impact (25)		
Was public comment received?	YES/NO. If yes, provide a bullet summary of main concerns.				
Has public comment been included in mitigation measures?	YES/NO, if NO then WHY? If YES then HOW/WHERE				
Mitigation measures to reduce residual risk or enhance opportunities: *List and describe* *Aaa* *Aaa* *Aaa* *Aaa* *Aaaa* …					
Residual impact	*Describe the impact.*				

ASSESSMENT OF CUMULATIVE IMPACTS

In relation to an activity, cumulative impact means *"the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may be significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities"* (NEMA EIA Reg GN R982 of 2014).

Specialists are required to assess cumulative impacts associated with similar developments within a 35 km radius of the proposed developments. The purpose of the cumulative assessment is to test if such impacts are relevant to the proposed developments in the proposed locations (i.e. whether the addition

of the proposed project in the area will increase the impact). In this regard, specialist studies considered whether the construction of the proposed development will result in:

- Unacceptable risk
- Unacceptable loss
- Complete or whole-scale changes to the environment or sense of place
- Unacceptable increase in impact

Cumulative Impacts will be assessed and populate in a cumulative impact summary table.

Please copy the below table into your reports for any impact assessments required.

Cumulative Impact: Name of impact					
Description of Cumulative Impact: Detailed description of cumulative impact xxxx …					
Impact Status: Detail of the impact is Positive, Neutral or Negative					
	E	**D**	**R**	**M**	**P**
Without Enhancement	Local	Medium Term	x	x	x
Score	2	3	x	x	x
With Enhancement	Site	Short Term	x	x	x
Score	1	2	x	x	x
Significance Calculation	**Without Enhancement**		**With Enhancement**		
S=(E+D+R+M)*P	Moderate Negative Impact (42)		Low Negative Impact (25)		
Can Impacts be Enhanced?	YES/NO and HOW/WHY				
Enhancement: *List and describe* *Aaa* *Aaa* *Aaa* *Aaa* *Aaaa* …					
Residual impact	*Describe the impact.*				

APPENDIX C COMPREHENSIVE LIST OF PLANT SPECIES POTENTIALLY PRESENT ON SITE

A comprehensive list of all plant species that are potentially present in the proposed Khoe WEF PAOI and their associated data sources are presented in Table 23 below. The sources include the SANBI POSA Brahms (B) database, the Global Biodiversity Information Facility (GBIF) database, The DFFE Online Screening Tool (ST) and the Biodiversity and Development Institute's Virtual Museum (VM) database.

TABLE 21: COMPREHENSIVE LIST OF PLANT SPECIES POTENTIALLY PRESENT WITHIN THE PROPOSED KHOE WEF PAOI.

Family	Species	Source	Family	Species	Source
Acanthaceae	*Blepharis capensis*	GBIF	Fabaceae	*Aspalathus pedicellata*	GBIF
Achariaceae	*Kiggelaria africana*	GBIF	Fabaceae	*Aspalathus perfoliata* subsp. *phillipsii*	B
Agavaceae	*Agave sisalana*	B	Fabaceae	*Aspalathus perforata*	B
Aizoaceae	*Acrodon bellidiflorus*	GBIF	Fabaceae	*Aspalathus pigmentosa*	B
Aizoaceae	*Acrosanthes anceps*	B	Fabaceae	*Aspalathus recurva*	ST
Aizoaceae	*Acrosanthes humifusa*	GBIF	Fabaceae	*Aspalathus rigidifolia*	GBIF
Aizoaceae	*Acrosanthes parviflora*	GBIF	Fabaceae	*Aspalathus rostrata*	B, ST
Aizoaceae	*Aizoon africanum*	GBIF	Fabaceae	*Aspalathus rugosa*	B
Aizoaceae	*Amphibolia laevis*	B	Fabaceae	*Aspalathus shawii*	B
Aizoaceae	*Antimima aristulata*	GBIF	Fabaceae	*Aspalathus shawii* subsp. *glabripetala*	GBIF
Aizoaceae	*Antimima condensa*	B, ST	Fabaceae	*Aspalathus shawii* subsp. *longispica*	GBIF, ST
Aizoaceae	*Antimima leipoldtii*	GBIF	Fabaceae	*Aspalathus shawii* subsp. *shawii*	B, GBIF
Aizoaceae	*Antimima mutica*	B, GBIF	Fabaceae	*Aspalathus simii*	B
Aizoaceae	*Antimima peersii*	GBIF	Fabaceae	*Aspalathus smithii*	B
Aizoaceae	*Braunsia apiculata*	GBIF	Fabaceae	*Aspalathus spiculata*	GBIF

Family	Species	Source	Family	Species	Source
Aizoaceae	*Carpobrotus edulis*	B, GBIF	Fabaceae	*Aspalathus spinosa*	GBIF
Aizoaceae	*Carpobrotus edulis subsp. edulis*	GBIF	Fabaceae	*Aspalathus spinosa* subsp. *flavispina*	GBIF
Aizoaceae	*Carpobrotus mellei*	GBIF	Fabaceae	*Aspalathus spinosa* subsp. *spinosa*	GBIF
Aizoaceae	*Cephalophyllum alstonii*	B	Fabaceae	*Aspalathus stenophylla*	B
Aizoaceae	*Cephalophyllum ceresianum*	B	Fabaceae	*Aspalathus steudeliana*	B
Aizoaceae	*Cephalophyllum diversiphyllum*	GBIF	Fabaceae	*Aspalathus tridentata* subsp. *tridentata*	B
Aizoaceae	*Cephalophyllum loreum*	GBIF	Fabaceae	*Aspalathus triquetra*	B
Aizoaceae	*Cephalophyllum purpureoalbum*	GBIF	Fabaceae	*Aspalathus wittebergensis*	B
Aizoaceae	*Cephalophyllum subulatoides*	B, GBIF	Fabaceae	*Bauhinia galpinii*	GBIF
Aizoaceae	*Cheiridopsis namaquensis*	GBIF	Fabaceae	*Calobota cytisoides*	GBIF
Aizoaceae	*Cleretum papulosum*	GBIF	Fabaceae	*Calobota elongata*	B
Aizoaceae	*Cleretum papulosum subsp. papulosum*	GBIF	Fabaceae	*Crotalaria excisa* subsp. *excisa*	GBIF
Aizoaceae	*Conophytum bicarinatum*	B	Fabaceae	*Cyclopia genistoides*	GBIF
Aizoaceae	*Conophytum minusculum*	B	Fabaceae	*Cyclopia glabra*	B
Aizoaceae	*Conophytum obcordellum* subsp. *obcordellum*	B	Fabaceae	*Dipogon lignosus*	B, GBIF
Aizoaceae	*Conophytum truncatum* subsp. *viridicatum*	GBIF	Fabaceae	*Gleditsia triacanthos*	GBIF
Aizoaceae	*Drosanthemum acuminatum*	GBIF	Fabaceae	*Hypocalyptus coluteoides*	GBIF
Aizoaceae	*Drosanthemum brevifolium*	B	Fabaceae	*Hypocalyptus oxalidifolius*	GBIF
Aizoaceae	*Drosanthemum calycinum*	GBIF	Fabaceae	*Hypocalyptus sophoroides*	B, GBIF
Aizoaceae	*Drosanthemum collinum*	B	Fabaceae	*Indigofera burchellii*	GBIF

Family	Species	Source	Family	Species	Source
Aizoaceae	*Drosanthemum comptonii*	B	Fabaceae	*Indigofera capillaris*	B, GBIF
Aizoaceae	*Drosanthemum delicatulum*	B	Fabaceae	*Indigofera complicata*	GBIF
Aizoaceae	*Drosanthemum expersum*	B	Fabaceae	*Indigofera frutescens*	B
Aizoaceae	*Drosanthemum giffenii*	GBIF, ST	Fabaceae	*Indigofera heterophylla*	B, GBIF
Aizoaceae	*Drosanthemum globosum*	GBIF	Fabaceae	*Indigofera humifusa*	B, GBIF
Aizoaceae	*Drosanthemum gracillimum*	GBIF	Fabaceae	*Indigofera meyeriana*	GBIF
Aizoaceae	*Drosanthemum hispidum*	GBIF	Fabaceae	*Indigofera pilgeriana*	GBIF
Aizoaceae	*Drosanthemum karrooense*	GBIF	Fabaceae	*Indigofera priorii*	GBIF
Aizoaceae	*Drosanthemum parvifolium*	GBIF	Fabaceae	*Indigofera* sp.	GBIF
Aizoaceae	*Drosanthemum praecultum*	GBIF	Fabaceae	*Lebeckia pauciflora*	B, GBIF
Aizoaceae	*Drosanthemum pulchrum*	GBIF	Fabaceae	*Lessertia frutescens*	GBIF
Aizoaceae	*Drosanthemum semiglobosum*	B, GBIF	Fabaceae	*Lessertia frutescens* subsp. *frutescens*	B, GBIF
Aizoaceae	*Drosanthemum speciosum*	GBIF	Fabaceae	*Lessertia frutescens* subsp. *microphylla*	GBIF
Aizoaceae	*Drosanthemum striatum*	B	Fabaceae	*Lessertia stenoloba*	B
Aizoaceae	*Drosanthemum thudichumii*	B	Fabaceae	*Liparia latifolia*	GBIF
Aizoaceae	*Drosanthemum tuberculiferum*	GBIF, ST	Fabaceae	*Lotononis argentea*	GBIF, ST
Aizoaceae	*Erepsia aspera*	B	Fabaceae	*Lotononis brevicaulis*	B
Aizoaceae	*Erepsia bracteata*	GBIF	Fabaceae	*Lotononis gracilifolia*	GBIF, ST
Aizoaceae	*Erepsia gracilis*	B	Fabaceae	*Medicago polymorpha*	GBIF
Aizoaceae	*Esterhuysenia alpina*	B	Fabaceae	*Medicago sativa*	GBIF
Aizoaceae	*Esterhuysenia inclaudens*	ST	Fabaceae	*Melilotus indicus*	GBIF

Family	Species	Source	Family	Species	Source
Aizoaceae	*Esterhuysenia stokoei*	B	Fabaceae	*Otholobium* sp. nov (Storton & Zanotvska 11281 NBG)	ST
Aizoaceae	*Galenia africana*	B	Fabaceae	*Otholobium striatum*	B
Aizoaceae	*Galenia fruticosa*	B	Fabaceae	*Podalyria calyptrata*	GBIF
Aizoaceae	*Galenia procumbens*	B	Fabaceae	*Podalyria myrtillifolia*	GBIF
Aizoaceae	*Gibbaeum gibbosum*	GBIF	Fabaceae	*Prosopis glandulosa* var. *torreyana*	B
Aizoaceae	*Gibbaeum pubescens*	B	Fabaceae	*Psoralea candicans*	GBIF
Aizoaceae	*Glottiphyllum depressum*	GBIF	Fabaceae	*Psoralea ensifolia*	GBIF
Aizoaceae	*Hereroa acuminata*	GBIF	Fabaceae	*Psoralea hirta*	GBIF
Aizoaceae	*Lampranthus aduncus*	GBIF	Fabaceae	*Psoralea odoratissima*	GBIF
Aizoaceae	*Lampranthus caudatus*	B	Fabaceae	*Psoralea ramulosa*	B
Aizoaceae	*Lampranthus dissimilis*	B	Fabaceae	*Psoralea speciosa*	GBIF
Aizoaceae	*Lampranthus elegans*	GBIF	Fabaceae	*Psoralea spicata*	GBIF
Aizoaceae	*Lampranthus falcatus*	B, GBIF	Fabaceae	*Psoralea spissa*	GBIF
Aizoaceae	*Lampranthus francesiae*	B	Fabaceae	*Psoralea striata*	GBIF
Aizoaceae	*Lampranthus laetus*	B	Fabaceae	*Psoralea usitata*	B
Aizoaceae	*Lampranthus mucronatus*	B	Fabaceae	*Psoralea verrucosa*	B, GBIF
Aizoaceae	*Lampranthus pocockiae*	B	Fabaceae	*Rafnia amplexicaulis*	B
Aizoaceae	*Lampranthus spiniformis*	GBIF	Fabaceae	*Rafnia capensis* subsp. *capensis*	B
Aizoaceae	*Leipoldtia schultzei*	GBIF	Fabaceae	*Rafnia capensis* subsp. *dichotoma*	B
Aizoaceae	*Lithops comptonii*	B	Fabaceae	*Rafnia rostrata* subsp. *rostrata*	B
Aizoaceae	*Malephora lutea*	GBIF	Fabaceae	*Senna multiglandulosa*	GBIF
Aizoaceae	*Mesembryanthemum crystallinum*	B, GBIF	Fabaceae	*Sesbania punicea*	GBIF

Family	Species	Source	Family	Species	Source
Aizoaceae	*Mesembryanthemum grossum*	B	Fabaceae	*Stirtonanthus insignis*	B, GBIF
Aizoaceae	*Mesembryanthemum guerichianum*	GBIF	Fabaceae	*Tephrosia capensis*	GBIF
Aizoaceae	*Mesembryanthemum junceum*	GBIF	Fabaceae	*Trifolium repens*	GBIF
Aizoaceae	*Mesembryanthemum longistylum*	B, GBIF	Fabaceae	*Vachellia karroo*	B, GBIF
Aizoaceae	*Mesembryanthemum noctiflorum subsp. defoliatum*	GBIF	Fabaceae	*Vachellia sieberiana*	GBIF
Aizoaceae	*Mesembryanthemum nodiflorum*	GBIF	Fabaceae	*Vicia benghalensis*	GBIF
Aizoaceae	*Mesembryanthemum tortuosum*	GBIF	Fabaceae	*Vicia sativa*	GBIF
Aizoaceae	*Oscularia deltoides*	B, GBIF	Fabaceae	*Wiborgia mucronata*	B
Aizoaceae	*Phiambolia francisci*	GBIF	Fabaceae	*Wiborgia tenuifolia*	GBIF
Aizoaceae	*Phiambolia gydouwensis*	GBIF	Fabaceae	*Xiphotheca fruticosa*	B, GBIF
Aizoaceae	*Psilocaulon bicorne*	B	Fabroniaceae	*Ischyrodon lepturus*	GBIF
Aizoaceae	*Ruschia amicorum*	B	Fumariaceae	*Cysticapnos vesicaria* subsp. *vesicaria*	B, GBIF
Aizoaceae	*Ruschia approximata*	GBIF	Funariaceae	*Funaria spathulata*	B
Aizoaceae	*Ruschia caroli*	GBIF	Gentianaceae	*Chironia baccifera*	B, GBIF
Aizoaceae	*Ruschia concava*	B	Gentianaceae	*Sebaea aurea*	GBIF
Aizoaceae	*Ruschia divaricata*	B	Gentianaceae	*Sebaea exacoides*	GBIF
Aizoaceae	*Ruschia frederici*	GBIF	Gentianaceae	*Sebaea membranacea*	B
Aizoaceae	*Ruschia lineolata*	B, GBIF	Geraniaceae	*Erodium cicutarium*	GBIF
Aizoaceae	*Ruschia multiflora*	B, GBIF	Geraniaceae	*Erodium moschatum*	B
Aizoaceae	*Ruschia pungens*	B, GBIF	Geraniaceae	*Geranium molle*	GBIF
Aizoaceae	*Ruschia rigida*	B	Geraniaceae	*Pelargonium abrotanifolium*	B, GBIF
Aizoaceae	*Ruschia tenella*	GBIF	Geraniaceae	*Pelargonium alchemilloides*	GBIF

Family	Species	Source	Family	Species	Source
Aizoaceae	*Ruschia tumidula*	B	Geraniaceae	*Pelargonium alternans*	GBIF
Aizoaceae	*Ruschiella argentea*	B, GBIF	Geraniaceae	*Pelargonium alternans subsp. alternans*	GBIF
Aizoaceae	*Ruschiella henricii*	B	Geraniaceae	*Pelargonium articulatum*	GBIF
Aizoaceae	*Ruschiella lunulata*	B, GBIF	Geraniaceae	*Pelargonium burgerianum*	GBIF
Aizoaceae	*Smicrostigma viride*	GBIF	Geraniaceae	*Pelargonium buysii*	B
Aizoaceae	*Tanquana prismatica*	B	Geraniaceae	*Pelargonium candicans*	B, GBIF
Aizoaceae	*Tetragonia fruticosa*	B	Geraniaceae	*Pelargonium carnosum*	B, GBIF
Aizoaceae	*Tetragonia saligna*	B, GBIF	Geraniaceae	*Pelargonium carnosum subsp. ferulaceum*	GBIF
Aizoaceae	*Tetragonia sarcophylla*	B	Geraniaceae	*Pelargonium caucalifolium* subsp. *caucalifolium*	B, GBIF
Aizoaceae	*Trichodiadema marlothii*	B, GBIF	Geraniaceae	*Pelargonium citronellum*	GBIF
Aizoaceae	*Trichodiadema pomeridianum*	GBIF	Geraniaceae	*Pelargonium columbinum*	GBIF
Aizoaceae	*Vlokia ater*	GBIF, ST	Geraniaceae	*Pelargonium coronopifolium*	GBIF
Alliaceae	*Tulbaghia capensis*	B, GBIF	Geraniaceae	*Pelargonium crispum*	B, GBIF
Amaranthaceae	*Atriplex lindleyi subsp. inflata*	GBIF	Geraniaceae	*Pelargonium crithmifolium*	B, GBIF
Amaranthaceae	*Atriplex nummularia*	GBIF	Geraniaceae	*Pelargonium elongatum*	B, GBIF
Amaranthaceae	*Atriplex semibaccata*	B, GBIF	Geraniaceae	*Pelargonium englerianum*	GBIF
Amaranthaceae	*Caroxylon aphyllum*	GBIF	Geraniaceae	*Pelargonium fergusoniae*	GBIF
Amaryllidaceae	*Agapanthus praecox subsp. praecox*	GBIF	Geraniaceae	*Pelargonium fissifolium*	GBIF
Amaryllidaceae	*Allium synnotii*	GBIF	Geraniaceae	*Pelargonium glutinosum*	B, GBIF
Amaryllidaceae	*Boophone disticha*	GBIF	Geraniaceae	*Pelargonium grossularioides*	GBIF
Amaryllidaceae	*Crossyne guttata*	GBIF	Geraniaceae	*Pelargonium hermaniifolium*	GBIF
Amaryllidaceae	*Cyrtanthus angustifolius*	B, GBIF	Geraniaceae	*Pelargonium hispidum*	B, GBIF

Family	Species	Source	Family	Species	Source
Amaryllidaceae	*Gethyllis campanulata*	B	Geraniaceae	*Pelargonium hypoleucum*	GBIF
Amaryllidaceae	*Gethyllis transkarooica*	B	Geraniaceae	*Pelargonium hystrix*	GBIF
Amaryllidaceae	*Gethyllis verrucosa*	GBIF	Geraniaceae	*Pelargonium laevigatum subsp. diversifolium*	GBIF
Amaryllidaceae	*Gethyllis villosa*	B	Geraniaceae	*Pelargonium laevigatum subsp. laevigatum*	GBIF
Amaryllidaceae	*Haemanthus coccineus*	B, GBIF	Geraniaceae	*Pelargonium lanceolatum*	B, GBIF
Amaryllidaceae	*Haemanthus sanguineus*	GBIF	Geraniaceae	*Pelargonium lobatum*	GBIF
Amaryllidaceae	*Hessea stellaris*	B, GBIF	Geraniaceae	*Pelargonium longicaule var. longicaule*	GBIF
Amaryllidaceae	*Nerine humilis*	B, GBIF	Geraniaceae	*Pelargonium longifolium*	B
Amaryllidaceae	*Nerine ridleyi*	B	Geraniaceae	*Pelargonium luteolum*	GBIF
Amaryllidaceae	*Nerine sarniensis*	B, GBIF	Geraniaceae	*Pelargonium luteopetalum*	GBIF
Amaryllidaceae	*Strumaria tenella*	B	Geraniaceae	*Pelargonium multicaule subsp. multicaule*	GBIF
Amaryllidaceae	*Strumaria tenella subsp. tenella*	GBIF	Geraniaceae	*Pelargonium myrrhifolium*	GBIF
Anacampserotaceae	*Anacampseros arachnoides*	GBIF	Geraniaceae	*Pelargonium myrrhifolium var. coriandrifolium*	GBIF
Anacampserotaceae	*Anacampseros filamentosa*	B	Geraniaceae	*Pelargonium myrrhifolium var. myrrhifolium*	GBIF
Anacampserotaceae	*Anacampseros lanceolata* subsp. *lanceolata*	B	Geraniaceae	*Pelargonium nanum*	GBIF
Anacampserotaceae	*Anacampseros retusa*	B, GBIF	Geraniaceae	*Pelargonium nervifolium*	GBIF
Anacampserotaceae	*Anacampseros telephiastrum*	GBIF	Geraniaceae	*Pelargonium ovale subsp. hyalinum*	GBIF
Anacardiaceae	*Ozoroa dispar*	B	Geraniaceae	*Pelargonium ovale subsp. ovale*	GBIF
Anacardiaceae	*Searsia angustifolia*	GBIF	Geraniaceae	*Pelargonium papilionaceum*	GBIF
Anacardiaceae	*Searsia dissecta*	B	Geraniaceae	*Pelargonium patulum*	GBIF

Family	Species	Source	Family	Species	Source
Anacardiaceae	*Searsia lancea*	GBIF	Geraniaceae	*Pelargonium patulum var. patulum*	GBIF
Anacardiaceae	*Searsia longispina*	GBIF	Geraniaceae	*Pelargonium patulum var. tenuilobum*	GBIF
Anacardiaceae	*Searsia lucida*	GBIF	Geraniaceae	*Pelargonium peltatum*	GBIF
Anacardiaceae	*Searsia pallens*	B, GBIF	Geraniaceae	*Pelargonium pillansii*	GBIF
Anacardiaceae	*Searsia pyroides var. pyroides*	GBIF	Geraniaceae	*Pelargonium pilosellifolium*	GBIF
Anacardiaceae	*Searsia tomentosa*	GBIF	Geraniaceae	*Pelargonium rapaceum*	B, GBIF
Anemiaceae	*Anemia caffrorum*	GBIF	Geraniaceae	*Pelargonium ribifolium*	GBIF
Apiaceae	*Anginon difforme*	GBIF	Geraniaceae	*Pelargonium scabrum*	B, GBIF
Apiaceae	*Anginon fruticosum*	B, GBIF	Geraniaceae	*Pelargonium tetragonum*	GBIF
Apiaceae	*Anginon swellendamense*	GBIF	Geraniaceae	*Pelargonium trifidum*	GBIF
Apiaceae	*Apium graveolens*	B	Geraniaceae	*Pelargonium triste*	GBIF
Apiaceae	*Arctopus echinatus*	GBIF	Geraniaceae	*Pelargonium zonale*	B, GBIF
Apiaceae	*Dasispermum tenue*	GBIF	Gleicheniaceae	*Gleichenia polypodioides*	B, GBIF
Apiaceae	*Deverra denudata* subsp. *aphylla*	B	Grimmiaceae	*Grimmia laevigata*	B
Apiaceae	*Itasina filifolia*	B	Grimmiaceae	*Grimmia pulvinata*	B
Apiaceae	*Lichtensteinia latifolia*	GBIF	Gunneraceae	*Gunnera perpensa*	GBIF
Apiaceae	*Notobubon capense*	GBIF	Haemodoraceae	*Dilatris ixioides*	B, GBIF
Apiaceae	*Notobubon gummiferum*	GBIF	Haemodoraceae	*Wachendorfia multiflora*	GBIF
Apiaceae	*Notobubon sonderi*	GBIF	Haemodoraceae	*Wachendorfia paniculata*	B, GBIF
Apiaceae	*Notobubon tenuifolium*	GBIF	Haemodoraceae	*Wachendorfia thyrsiflora*	GBIF
Apiaceae	*Peucedanum ferulaceum*	B	Hemerocallidaceae	*Caesia contorta*	B, GBIF
Apocynaceae	*Carissa bispinosa*	B, GBIF	Hyacinthaceae	*Albuca viscosa*	B, GBIF
Apocynaceae	*Carissa haematocarpa*	GBIF	Hyacinthaceae	*Drimia intricata*	B

Family	Species	Source	Family	Species	Source
Apocynaceae	*Ceropegia occulta*	GBIF	Hyacinthaceae	*Drimia multifolia*	B
Apocynaceae	*Cynanchum obtusifolium*	GBIF	Hyacinthaceae	*Drimia physodes*	B, GBIF
Apocynaceae	*Cynanchum viminale*	GBIF	Hyacinthaceae	*Lachenalia ameliae*	B
Apocynaceae	*Cynanchum viminale* subsp. *viminale*	GBIF	Hyacinthaceae	*Lachenalia attenuata*	B
Apocynaceae	*Duvalia caespitosa*	GBIF	Hyacinthaceae	*Lachenalia aurioliae*	B, GBIF
Apocynaceae	*Duvalia elegans*	GBIF	Hyacinthaceae	*Lachenalia comptonii*	B
Apocynaceae	*Eustegia minuta*	GBIF	Hyacinthaceae	*Lachenalia contaminata*	B
Apocynaceae	*Gomphocarpus cancellatus*	GBIF	Hyacinthaceae	*Lachenalia juncifolia*	B, GBIF
Apocynaceae	*Gomphocarpus fruticosus*	GBIF	Hyacinthaceae	*Lachenalia leipoldtii*	B
Apocynaceae	*Huernia pillansii*	B	Hyacinthaceae	*Lachenalia obscura*	B, GBIF
Apocynaceae	*Microloma sagittatum*	B, GBIF	Hyacinthaceae	*Lachenalia perryae*	B, GBIF
Apocynaceae	*Microloma tenuifolium*	GBIF	Hyacinthaceae	*Lachenalia zeyheri*	B
Apocynaceae	*Orbea variegata*	GBIF	Hyacinthaceae	*Massonia depressa*	B, GBIF
Apocynaceae	*Piaranthus geminatus*	GBIF	Hyacinthaceae	*Massonia setulosa*	GBIF
Apocynaceae	*Quaqua arenicola* subsp. *arenicola*	B	Hyacinthaceae	*Massonia triflora*	GBIF
Apocynaceae	*Quaqua arida*	GBIF	Hyacinthaceae	*Ornithogalum dubium*	B, GBIF
Apocynaceae	*Quaqua linearis*	GBIF	Hyacinthaceae	*Ornithogalum hispidum*	B, GBIF
Apocynaceae	*Quaqua mammillaris*	GBIF	Hyacinthaceae	*Ornithogalum maculatum*	B, GBIF
Apocynaceae	*Quaqua pillansii*	GBIF	Hyacinthaceae	*Veltheimia capensis*	B, GBIF
Apocynaceae	*Quaqua ramosa*	GBIF	Hydnoraceae	*Hydnora africana*	GBIF
Apocynaceae	*Sarcostemma viminale* subsp. *viminale*	B	Hymenophyllaceae	*Hymenophyllum tunbrigense*	GBIF
Apocynaceae	*Schizoglossum aschersonianum*	GBIF	Hypoxidaceae	*Pauridia aquatica*	B

Family	Species	Source	Family	Species	Source
Apocynaceae	*Schizoglossum aschersonianum var. aschersonianum*	GBIF	Hypoxidaceae	*Pauridia capensis*	B, GBIF
Apocynaceae	*Stapelia hirsuta*	GBIF	Hypoxidaceae	*Pauridia maryae*	GBIF
Apocynaceae	*Stapelia hirsuta var. hirsuta*	GBIF	Hypoxidaceae	*Pauridia serrata*	GBIF
Apocynaceae	*Stapelia paniculata subsp. scitula*	GBIF	Hypoxidaceae	*Pauridia serrata* subsp. *serrata*	B
Apocynaceae	*Stapelia rufa*	GBIF	Hypoxidaceae	*Spiloxene aemulans*	B
Apocynaceae	*Stapeliopsis saxatilis*	GBIF	Hypoxidaceae	*Spiloxene aquatica*	B
Apocynaceae	*Tridentea gemmiflora*	GBIF	Hypoxidaceae	*Spiloxene capensis*	B
Apocynaceae	*Vinca major*	GBIF	Hypoxidaceae	*Spiloxene ovata*	B
Apocynaceae	*Xysmalobium gomphocarpoides*	GBIF	Hypoxidaceae	*Spiloxene serrata* var. *serrata*	B
Apocynaceae	*Xysmalobium gomphocarpoides var. gomphocarpoides*	GBIF	Iridaceae	*Afrocrocus unifolius*	B, GBIF
Apocynaceae	*Xysmalobium undulatum*	GBIF	Iridaceae	*Aristea spiralis*	GBIF
Araceae	*Zantedeschia aethiopica*	B, GBIF	Iridaceae	*Babiana ambigua*	GBIF
Asparagaceae	*Albuca canadensis*	GBIF	Iridaceae	*Babiana cuneata*	GBIF
Asparagaceae	*Albuca longipes*	GBIF	Iridaceae	*Babiana nana*	GBIF
Asparagaceae	*Albuca setosa*	GBIF	Iridaceae	*Babiana patula*	GBIF
Asparagaceae	*Albuca suaveolens*	GBIF	Iridaceae	*Babiana sambucina*	B, GBIF
Asparagaceae	*Asparagus aethiopicus*	GBIF	Iridaceae	*Babiana sambucina* subsp. *sambucina*	B, GBIF
Asparagaceae	*Asparagus asparagoides*	GBIF	Iridaceae	*Babiana scariosa*	B
Asparagaceae	*Asparagus capensis*	GBIF	Iridaceae	*Bobartia orientalis* subsp. *orientalis*	GBIF
Asparagaceae	*Asparagus kraussianus*	B	Iridaceae	*Chasmanthe aethiopica*	GBIF
Asparagaceae	*Asparagus lignosus*	GBIF	Iridaceae	*Chasmanthe bicolor*	GBIF

Family	Species	Source	Family	Species	Source
Asparagaceae	*Asparagus mollis*	ST	Iridaceae	*Ferraria crispa*	B
Asparagaceae	*Asparagus mucronatus*	B	Iridaceae	*Ferraria divaricata* subsp. *divaricata*	B
Asparagaceae	*Asparagus retrofractus*	B, GBIF	Iridaceae	*Ferraria variabilis*	GBIF
Asparagaceae	*Asparagus rubicundus*	B, GBIF	Iridaceae	*Freesia caryophyllacea*	GBIF
Asparagaceae	*Asparagus scandens*	GBIF	Iridaceae	*Freesia refracta*	GBIF
Asparagaceae	*Asparagus suaveolens*	B	Iridaceae	*Geissorhiza heterostyla*	B, GBIF
Asparagaceae	*Chlorophytum crispum*	GBIF	Iridaceae	*Geissorhiza heterostyla* subsp. *rosea*	B
Asparagaceae	*Chlorophytum graminifolium*	GBIF	Iridaceae	*Geissorhiza juncea*	B
Asparagaceae	*Dipcadi brevifolium*	GBIF	Iridaceae	*Geissorhiza ornithogaloides*	GBIF
Asparagaceae	*Drimia capensis*	GBIF	Iridaceae	*Geissorhiza ornithogaloides* subsp. *marlothii*	B, GBIF
Asparagaceae	*Drimia elata*	GBIF	Iridaceae	*Geissorhiza ornithogaloides* subsp. *ornithogaloides*	GBIF
Asparagaceae	*Drimia exuviata*	GBIF	Iridaceae	*Geissorhiza ovalifolia*	B
Asparagaceae	*Drimia fragrans*	GBIF	Iridaceae	*Geissorhiza ovata*	GBIF
Asparagaceae	*Drimia platyphylla*	GBIF	Iridaceae	*Gladiolus alatus*	B, GBIF
Asparagaceae	*Drimia sigmoidea*	GBIF	Iridaceae	*Gladiolus cardinalis*	B, GBIF
Asparagaceae	*Eriospermum alcicorne*	GBIF	Iridaceae	*Gladiolus carinatus*	B, GBIF
Asparagaceae	*Eriospermum dregei*	GBIF	Iridaceae	*Gladiolus carneus*	GBIF
Asparagaceae	*Eriospermum paradoxum*	GBIF	Iridaceae	*Gladiolus ceresianus*	GBIF
Asparagaceae	*Eriospermum proliferum*	GBIF	Iridaceae	*Gladiolus debilis*	GBIF
Asparagaceae	*Eucomis regia*	GBIF	Iridaceae	*Gladiolus floribundus*	B, GBIF
Asparagaceae	*Furcraea foetida*	GBIF	Iridaceae	*Gladiolus gracilis*	GBIF
Asparagaceae	*Lachenalia ensifolia*	GBIF	Iridaceae	*Gladiolus grandiflorus*	B, GBIF

Family	Species	Source	Family	Species	Source
Asparagaceae	*Lachenalia judithiae*	GBIF	Iridaceae	*Gladiolus guthriei*	B, GBIF
Asparagaceae	*Lachenalia mutabilis*	GBIF	Iridaceae	*Gladiolus inflatus*	GBIF
Asparagaceae	*Lachenalia orchioides*	GBIF	Iridaceae	*Gladiolus liliaceus*	GBIF
Asparagaceae	*Lachenalia unifolia*	GBIF	Iridaceae	*Gladiolus maculatus*	B, GBIF
Asparagaceae	*Ledebouria ovalifolia*	GBIF	Iridaceae	*Gladiolus patersoniae*	B
Asparagaceae	*Ornithogalum graminifolium*	GBIF	Iridaceae	*Gladiolus permeabilis*	GBIF
Asparagaceae	*Ornithogalum rupestre*	GBIF	Iridaceae	*Gladiolus permeabilis* subsp. *edulis*	B
Asphodelaceae	*Aloe chabaudii* var. *chabaudii*	B	Iridaceae	*Gladiolus permeabilis* subsp. *permeabilis*	B, GBIF
Asphodelaceae	*Aloe comosa*	B	Iridaceae	*Gladiolus quadrangularis*	B, GBIF
Asphodelaceae	*Aloe microstigma*	GBIF	Iridaceae	*Gladiolus rogersii*	B, GBIF
Asphodelaceae	*Aloe perfoliata*	B, GBIF	Iridaceae	*Gladiolus rudis*	B
Asphodelaceae	*Aloe striata*	B, GBIF	Iridaceae	*Gladiolus scullyi*	B
Asphodelaceae	*Astroloba corrugata*	GBIF	Iridaceae	*Gladiolus stefaniae*	GBIF
Asphodelaceae	*Bulbine abyssinica*	B, GBIF	Iridaceae	*Gladiolus tristis*	GBIF
Asphodelaceae	*Bulbine frutescens*	GBIF	Iridaceae	*Gladiolus venustus*	B, GBIF
Asphodelaceae	*Bulbine lagopus*	B, GBIF	Iridaceae	*Gladiolus virescens*	B, GBIF
Asphodelaceae	*Bulbine mesembryanthoides*	GBIF	Iridaceae	*Hesperantha acuta* subsp. *acuta*	B
Asphodelaceae	*Bulbine mesembryanthoides* subsp. *mesembryanthoides*	B	Iridaceae	*Hesperantha bachmannii*	B, GBIF
Asphodelaceae	*Bulbine praemorsa*	GBIF	Iridaceae	*Hesperantha cucullata*	GBIF
Asphodelaceae	*Bulbine succulenta*	B, GBIF	Iridaceae	*Hesperantha falcata*	B, GBIF
Asphodelaceae	*Bulbinella cauda-felis*	B	Iridaceae	*Hesperantha flava*	GBIF
Asphodelaceae	*Bulbinella elata*	B	Iridaceae	*Hesperantha humilis*	B, GBIF
Asphodelaceae	*Bulbinella latifolia* subsp. *denticulata*	B	Iridaceae	*Hesperantha marlothii*	B

Family	Species	Source	Family	Species	Source
Asphodelaceae	*Bulbinella nutans*	B	Iridaceae	*Hesperantha radiata*	GBIF
Asphodelaceae	*Bulbinella nutans* subsp. *nutans*	B, GBIF	Iridaceae	*Ixia capillaris*	B
Asphodelaceae	*Bulbinella nutans* subsp. *turfosicola*	B	Iridaceae	*Ixia exiliflora*	B
Asphodelaceae	*Bulbinella triquetra*	B, GBIF	Iridaceae	*Ixia fucata*	ST
Asphodelaceae	*Gasteria disticha*	GBIF	Iridaceae	*Ixia fucata*	GBIF
Asphodelaceae	*Gasteria disticha* var. *disticha*	B, GBIF	Iridaceae	*Ixia latifolia*	B, GBIF
Asphodelaceae	*Gasteria disticha* var. *langebergensis*	GBIF	Iridaceae	*Ixia latifolia var. latifolia*	GBIF
Asphodelaceae	*Gasteria retusa*	B	Iridaceae	*Ixia mostertii*	B
Asphodelaceae	*Haworthia arachnoidea*	GBIF	Iridaceae	*Ixia nutans*	B
Asphodelaceae	*Haworthia arachnoidea* var. *arachnoidea*	B, GBIF	Iridaceae	*Ixia oxalidiflora*	B, GBIF
Asphodelaceae	*Haworthia herbacea* var. *lupula*	B	Iridaceae	*Ixia parva*	ST
Asphodelaceae	*Haworthia maculata*	B	Iridaceae	*Ixia paucifolia*	B, GBIF
Asphodelaceae	*Haworthia maraisii*	GBIF	Iridaceae	*Ixia polystachya*	B
Asphodelaceae	*Haworthia maraisii var. maraisii*	GBIF	Iridaceae	*Ixia simulans*	GBIF
Asphodelaceae	*Haworthia mucronata*	GBIF	Iridaceae	*Ixia stenophylla*	GBIF
Asphodelaceae	*Haworthia pulchella* var. *pulchella*	B, GBIF	Iridaceae	*Ixia stolonifera*	B, GBIF
Asphodelaceae	*Haworthia reticulata* var. *reticulata*	B	Iridaceae	*Ixia vanzijliae*	B
Asphodelaceae	*Haworthia venosa*	B	Iridaceae	*Lapeirousia plicata*	GBIF
Asphodelaceae	*Kniphofia sarmentosa*	B, GBIF	Iridaceae	*Lapeirousia pyramidalis*	GBIF
Asphodelaceae	*Kniphofia uvaria*	B, GBIF	Iridaceae	*Lapeirousia pyramidalis* subsp. *pyramidalis*	GBIF
Asphodelaceae	*Trachyandra flexifolia*	B	Iridaceae	*Melasphaerula graminea*	B, GBIF

Family	Species	Source	Family	Species	Source
Asphodelaceae	*Trachyandra revoluta*	B	Iridaceae	*Moraea angusta*	B
Asphodelaceae	*Tulista pumila*	GBIF	Iridaceae	*Moraea ciliata*	B, GBIF
Aspleniaceae	*Asplenium aethiopicum*	GBIF	Iridaceae	*Moraea cookii*	GBIF
Asteraceae	*Achyranthemum paniculatum*	B, GBIF	Iridaceae	*Moraea crispa*	GBIF
Asteraceae	*Anderbergia elsiae*	ST	Iridaceae	*Moraea cuspidata*	B
Asteraceae	*Arctotheca calendula*	GBIF	Iridaceae	*Moraea falcifolia*	GBIF
Asteraceae	*Arctotheca prostrata*	GBIF	Iridaceae	*Moraea fugacissima*	GBIF
Asteraceae	*Arctotis arctotoides*	B	Iridaceae	*Moraea fugax*	GBIF
Asteraceae	*Arctotis candida*	B	Iridaceae	*Moraea gawleri*	B, GBIF
Asteraceae	*Arctotis dregei*	GBIF	Iridaceae	*Moraea inconspicua*	GBIF
Asteraceae	*Arctotis revoluta*	B	Iridaceae	*Moraea inconspicua subsp. inconspicua*	GBIF
Asteraceae	*Arctotis subacaulis*	GBIF	Iridaceae	*Moraea karroica*	B, GBIF
Asteraceae	*Artemisia afra*	GBIF	Iridaceae	*Moraea lewisiae*	GBIF
Asteraceae	*Artemisia afra* var. *afra*	B	Iridaceae	*Moraea macronyx*	B, GBIF
Asteraceae	*Athanasia flexuosa*	B	Iridaceae	*Moraea miniata*	GBIF
Asteraceae	*Athanasia hirsuta*	ST	Iridaceae	*Moraea polyanthos*	B
Asteraceae	*Athanasia hirsuta*	B, GBIF	Iridaceae	*Moraea setifolia*	GBIF
Asteraceae	*Athanasia linifolia*	B	Iridaceae	*Moraea thomasiae*	B, GBIF
Asteraceae	*Athanasia trifurcata*	GBIF	Iridaceae	*Moraea tricuspidata*	GBIF
Asteraceae	*Berkheya armata*	GBIF	Iridaceae	*Moraea tripetala*	B, GBIF
Asteraceae	*Berkheya barbata*	GBIF	Iridaceae	*Moraea tripetala subsp. tripetala*	GBIF
Asteraceae	*Berkheya carlinifolia*	GBIF	Iridaceae	*Moraea tripetala* subsp. *violacea*	B, GBIF
Asteraceae	*Berkheya heterophylla*	GBIF	Iridaceae	*Moraea unguiculata*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Berkheya heterophylla* var. *radiata*	B, GBIF	Iridaceae	*Moraea virgata*	GBIF
Asteraceae	*Berkheya onobromoides*	GBIF	Iridaceae	*Romulea atrandra*	GBIF
Asteraceae	*Berkheya onobromoides var. carlinoides*	GBIF	Iridaceae	*Romulea atrandra* var. *atrandra*	B, GBIF
Asteraceae	*Berkheya onobromoides var. onobromoides*	GBIF	Iridaceae	*Romulea atrandra* var. *esterhuyseniae*	B, GBIF
Asteraceae	*Berkheya spinosa*	GBIF	Iridaceae	*Romulea austinii*	GBIF
Asteraceae	*Bolandia pedunculosa*	GBIF	Iridaceae	*Romulea flava*	GBIF
Asteraceae	*Brachylaena neriifolia*	B, GBIF	Iridaceae	*Romulea hallii*	GBIF
Asteraceae	*Chrysocoma ciliata*	B, GBIF	Iridaceae	*Romulea luteiflora*	B
Asteraceae	*Chrysocoma valida*	B	Iridaceae	*Romulea malaniae*	B, ST
Asteraceae	*Cichorium intybus*	GBIF	Iridaceae	*Romulea minutiflora*	B, GBIF
Asteraceae	*Cineraria alchemilloides*	B	Iridaceae	*Romulea rosea*	GBIF
Asteraceae	*Cirsium vulgare*	GBIF	Iridaceae	*Romulea rosea var. rosea*	GBIF
Asteraceae	*Conyza scabrida*	B	Iridaceae	*Romulea setifolia* var. *ceresiana*	B
Asteraceae	*Corymbium villosum*	GBIF	Iridaceae	*Romulea setifolia* var. *setifolia*	B
Asteraceae	*Cotula coronopifolia*	GBIF	Iridaceae	*Romulea sphaerocarpa*	B
Asteraceae	*Cotula macroglossa*	B, GBIF	Iridaceae	*Romulea tetragona*	GBIF
Asteraceae	*Crassothonna alba*	GBIF	Iridaceae	*Romulea tortuosa*	GBIF
Asteraceae	*Crassothonna capensis*	GBIF	Iridaceae	*Romulea tortuosa* subsp. *depauperata*	B
Asteraceae	*Crassothonna protecta*	GBIF	Iridaceae	*Romulea tortuosa* subsp. *tortuosa*	B, GBIF
Asteraceae	*Cullumia bisulca*	B	Iridaceae	*Romulea vlokii*	GBIF, ST
Asteraceae	*Cullumia patula* subsp. *patula*	GBIF	Iridaceae	*Tritonia pallida*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Cullumia patula* subsp. *uncinata*	GBIF	Iridaceae	*Tritonia pallida* subsp. *pallida*	B
Asteraceae	*Cullumia sulcata*	GBIF	Iridaceae	*Tritoniopsis antholyza*	GBIF
Asteraceae	*Cullumia sulcata* var. *sulcata*	B, GBIF	Iridaceae	*Tritoniopsis dodii*	GBIF
Asteraceae	*Curio acaulis*	GBIF	Iridaceae	*Tritoniopsis ramosa*	GBIF
Asteraceae	*Curio archeri*	GBIF	Iridaceae	*Tritoniopsis ramosa var. ramosa*	GBIF
Asteraceae	*Curio citriformis*	GBIF	Iridaceae	*Watsonia aletroides*	B, GBIF
Asteraceae	*Curio radicans*	GBIF	Iridaceae	*Watsonia meriana*	GBIF
Asteraceae	*Curio repens*	GBIF	Iridaceae	*Watsonia zeyheri*	B
Asteraceae	*Curio talinoides*	GBIF	Iridaceae	*Xenoscapa fistulosa*	B, GBIF
Asteraceae	*Curio talinoides* var. *aizoides*	GBIF	Juncaceae	*Juncus lomatophyllus*	GBIF
Asteraceae	*Cymbopappus adenosolen*	GBIF	Juncaceae	*Juncus punctorius*	B
Asteraceae	*Dicerothamnus adpressus*	GBIF	Juncaginaceae	*Triglochin bulbosa*	GBIF
Asteraceae	*Dicerothamnus rhinocerotis*	B, GBIF	Lamiaceae	*Coleus barbatus* var. *grandis*	GBIF
Asteraceae	*Dimorphotheca chrysanthemifolia*	B	Lamiaceae	*Lamium amplexicaule*	GBIF
Asteraceae	*Dimorphotheca cuneata*	B, GBIF	Lamiaceae	*Leonotis leonurus*	GBIF
Asteraceae	*Dimorphotheca montana*	B	Lamiaceae	*Mentha longifolia*	GBIF
Asteraceae	*Dimorphotheca nudicaulis*	GBIF	Lamiaceae	*Mentha longifolia subsp. capensis*	GBIF
Asteraceae	*Dimorphotheca nudicaulis* var. *nudicaulis*	B	Lamiaceae	*Plectranthus ramosior*	B
Asteraceae	*Dimorphotheca sinuata*	GBIF	Lamiaceae	*Pseudodictamnus africanus*	GBIF
Asteraceae	*Disparago pilosa*	B	Lamiaceae	*Salvia africana*	GBIF
Asteraceae	*Dolichothrix ericoides*	GBIF	Lamiaceae	*Salvia chamelaeagnea*	B, GBIF
Asteraceae	*Edmondia fasciculata*	B	Lamiaceae	*Salvia disermas*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Edmondia pinifolia*	GBIF	Lamiaceae	*Stachys aethiopica*	B, GBIF
Asteraceae	*Edmondia sesamoides*	B, GBIF	Lamiaceae	*Stachys sublobata*	B
Asteraceae	*Elytropappus hispidus*	B	Lauraceae	*Cassytha ciliolata*	GBIF
Asteraceae	*Eriocephalus africanus*	GBIF	Lauraceae	*Cryptocarya angustifolia*	B
Asteraceae	*Eriocephalus africanus* var. *paniculatus*	B	Lentibulariaceae	*Utricularia bisquamata*	GBIF
Asteraceae	*Eriocephalus aromaticus*	B, GBIF	Limeaceae	*Limeum aethiopicum*	GBIF
Asteraceae	*Eriocephalus ericoides*	GBIF	Limeaceae	*Limeum capense*	B
Asteraceae	*Eriocephalus ericoides* subsp. *ericoides*	B, GBIF	Limeaceae	*Limeum telephioides var. telephioides*	GBIF
Asteraceae	*Eriocephalus punctulatus*	B	Lobeliaceae	*Lobelia setacea*	B
Asteraceae	*Euryops abrotanifolius*	B, GBIF	Loranthaceae	*Moquiniella rubra*	GBIF
Asteraceae	*Euryops imbricatus*	B, GBIF	Loranthaceae	*Septulina glauca*	GBIF
Asteraceae	*Euryops lateriflorus*	B	Lycopodiaceae	*Lycopodium clavatum*	GBIF
Asteraceae	*Euryops othonnoides*	B	Malvaceae	*Abutilon sonneratianum*	GBIF
Asteraceae	*Euryops tagetoides*	B	Malvaceae	*Anisodontea dissecta*	GBIF
Asteraceae	*Euryops tenuissimus*	GBIF	Malvaceae	*Anisodontea elegans*	B
Asteraceae	*Euryops tenuissimus* subsp. *tenuissimus*	B, GBIF	Malvaceae	*Anisodontea procumbens*	B
Asteraceae	*Felicia amoena*	GBIF	Malvaceae	*Anisodontea triloba*	B, GBIF
Asteraceae	*Felicia amoena* subsp. *stricta*	B	Malvaceae	*Grewia occidentalis*	GBIF
Asteraceae	*Felicia bellidioides* subsp. *foliata*	B	Malvaceae	*Hermannia alnifolia*	GBIF
Asteraceae	*Felicia denticulata*	B	Malvaceae	*Hermannia althaeifolia*	B, GBIF
Asteraceae	*Felicia filifolia*	GBIF	Malvaceae	*Hermannia angularis*	B, GBIF
Asteraceae	*Felicia filifolia* subsp. *bodkinii*	B	Malvaceae	*Hermannia confusa*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Felicia filifolia subsp. filifolia*	GBIF	Malvaceae	*Hermannia cuneifolia* var. *cuneifolia*	B
Asteraceae	*Felicia filifolia* subsp. *schaeferi*	B, GBIF	Malvaceae	*Hermannia diversistipula*	GBIF
Asteraceae	*Felicia filifolia* subsp. *schlechteri*	B	Malvaceae	*Hermannia filifolia*	GBIF
Asteraceae	*Felicia hispida*	B	Malvaceae	*Hermannia filifolia var. filifolia*	GBIF
Asteraceae	*Felicia macrorrhiza*	B	Malvaceae	*Hermannia holosericea*	GBIF
Asteraceae	*Felicia venusta*	B	Malvaceae	*Hermannia hyssopifolia*	GBIF
Asteraceae	*Gazania splendens*	GBIF	Malvaceae	*Hermannia multiflora*	B
Asteraceae	*Gerbera serrata*	GBIF	Malvaceae	*Hermannia muricata*	B, GBIF
Asteraceae	*Gnaphalium declinatum*	GBIF	Malvaceae	*Hermannia odorata*	GBIF
Asteraceae	*Gorteria integrifolia*	GBIF	Malvaceae	*Hermannia pulverata*	B
Asteraceae	*Gorteria piloselloides*	GBIF	Malvaceae	*Hermannia salviifolia*	GBIF
Asteraceae	*Helichrysum acrophilum*	B	Malvaceae	*Hibiscus aethiopicus*	GBIF
Asteraceae	*Helichrysum asperum* var. *albidulum*	B, GBIF	Malvaceae	*Hibiscus pusillus*	B, GBIF
Asteraceae	*Helichrysum cylindriflorum*	B, GBIF	Malvaceae	*Hibiscus trionum*	GBIF
Asteraceae	*Helichrysum excisum*	GBIF	Marsileaceae	*Marsilea macrocarpa*	B
Asteraceae	*Helichrysum felinum*	GBIF	Melianthaceae	*Melianthus major*	GBIF
Asteraceae	*Helichrysum foetidum*	GBIF	Menispermaceae	*Cissampelos capensis*	GBIF
Asteraceae	*Helichrysum hamulosum*	B, GBIF	Mniaceae	*Pohlia elongata*	B
Asteraceae	*Helichrysum hebelepis*	B	Molluginaceae	*Adenogramma glomerata*	GBIF
Asteraceae	*Helichrysum helianthemifolium*	B	Molluginaceae	*Pharnaceum ciliare*	GBIF
Asteraceae	*Helichrysum indicum*	B	Molluginaceae	*Pharnaceum dichotomum*	GBIF
Asteraceae	*Helichrysum interzonale*	B	Molluginaceae	*Psammotropha quadrangularis*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Helichrysum lambertianum*	B	Montiniaceae	*Montinia caryophyllacea*	GBIF
Asteraceae	*Helichrysum lancifolium*	B, GBIF	Moraceae	*Ficus carica*	GBIF
Asteraceae	*Helichrysum leontonyx*	GBIF	Myricaceae	*Morella integra*	GBIF
Asteraceae	*Helichrysum moeserianum*	B	Myricaceae	*Morella quercifolia*	B
Asteraceae	*Helichrysum nudifolium* var. *nudifolium*	GBIF	Myricaceae	*Morella serrata*	GBIF
Asteraceae	*Helichrysum pandurifolium*	B	Myrsinaceae	*Rapanea melanophloeos*	B, GBIF
Asteraceae	*Helichrysum patulum*	B, GBIF	Myrtaceae	*Eucalyptus camaldulensis*	GBIF
Asteraceae	*Helichrysum petiolare*	B	Myrtaceae	*Metrosideros angustifolia*	B, GBIF
Asteraceae	*Helichrysum pulchellum*	B	Neuradaceae	*Grielum humifusum* var. *humifusum*	B
Asteraceae	*Helichrysum retortum*	B	Oleaceae	*Olea europaea*	GBIF
Asteraceae	*Helichrysum rutilans*	B, GBIF	Oleaceae	*Olea europaea subsp. cuspidata*	GBIF
Asteraceae	*Helichrysum spiralepis*	B	Orchidaceae	*Acrolophia capensis*	B
Asteraceae	*Helichrysum stoloniferum*	B	Orchidaceae	*Bartholina burmanniana*	B, GBIF
Asteraceae	*Helichrysum teretifolium*	B	Orchidaceae	*Bartholina etheliae*	GBIF
Asteraceae	*Helichrysum tinctum*	B	Orchidaceae	*Bonatea speciosa*	GBIF
Asteraceae	*Helichrysum zeyheri*	GBIF	Orchidaceae	*Ceratandra globosa*	GBIF
Asteraceae	*Heterolepis aliena*	B, GBIF	Orchidaceae	*Disa atricapilla*	B
Asteraceae	*Hippia frutescens*	GBIF	Orchidaceae	*Disa atrorubens*	GBIF
Asteraceae	*Hymenolepis calva*	B, GBIF	Orchidaceae	*Disa bifida*	VM
Asteraceae	*Hymenolepis crithmifolia*	GBIF	Orchidaceae	*Disa bifida*	GBIF
Asteraceae	*Hymenolepis dentata*	B	Orchidaceae	*Disa bracteata*	GBIF
Asteraceae	*Hymenolepis gnidioides*	B, GBIF	Orchidaceae	*Disa comosa*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Hymenolepis incisa*	B	Orchidaceae	*Disa cornuta*	GBIF
Asteraceae	*Hypochaeris radicata*	GBIF	Orchidaceae	*Disa densiflora*	GBIF
Asteraceae	*Ifloga ambigua*	GBIF	Orchidaceae	*Disa graminifolia*	GBIF
Asteraceae	*Lactuca serriola*	GBIF	Orchidaceae	*Disa harveyana subsp. harveyana*	GBIF
Asteraceae	*Lasiospermum bipinnatum*	B	Orchidaceae	*Disa inflexa*	GBIF
Asteraceae	*Macledium spinosum*	GBIF	Orchidaceae	*Disa lineata*	GBIF
Asteraceae	*Mairia burchellii*	GBIF	Orchidaceae	*Disa obliqua*	B
Asteraceae	*Metalasia acuta*	B, GBIF	Orchidaceae	*Disa ovalifolia*	VM
Asteraceae	*Metalasia brevifolia*	B	Orchidaceae	*Disa ovalifolia*	GBIF
Asteraceae	*Metalasia cephalotes*	B	Orchidaceae	*Disa salteri*	GBIF
Asteraceae	*Metalasia densa*	B, GBIF	Orchidaceae	*Disa spathulata subsp. spathulata*	GBIF
Asteraceae	*Metalasia eburnea*	GBIF	Orchidaceae	*Disa spathulata* subsp. *tripartita*	VM
Asteraceae	*Metalasia fastigiata*	B	Orchidaceae	*Disa vaginata*	GBIF
Asteraceae	*Metalasia helmei*	B, GBIF	Orchidaceae	*Disa venosa*	B
Asteraceae	*Metalasia muricata*	B	Orchidaceae	*Disperis bolusiana*	VM
Asteraceae	*Metalasia phillipsii* subsp. *incurva*	B	Orchidaceae	*Disperis bolusiana* subsp. *bolusiana*	B, GBIF
Asteraceae	*Monticapra pilosa*	B	Orchidaceae	*Disperis capensis*	GBIF
Asteraceae	*Muscosomorphe aretioides*	GBIF	Orchidaceae	*Disperis capensis var. capensis*	GBIF
Asteraceae	*Myrovernix glandulosus*	GBIF	Orchidaceae	*Disperis purpurata subsp. purpurata*	GBIF
Asteraceae	*Myrovernix scaber*	B	Orchidaceae	*Disperis villosa*	B, GBIF
Asteraceae	*Nidorella ivifolia*	GBIF	Orchidaceae	*Holothrix aspera*	GBIF
Asteraceae	*Oedera calycina*	GBIF	Orchidaceae	*Holothrix brevipetala*	B
Asteraceae	*Oedera capensis*	B, GBIF	Orchidaceae	*Holothrix cernua*	GBIF
Asteraceae	*Oedera genistifolia*	B, GBIF	Orchidaceae	*Holothrix exilis*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Oedera hirta*	B	Orchidaceae	*Holothrix grandiflora*	GBIF
Asteraceae	*Oedera pungens subsp. trinervis*	GBIF	Orchidaceae	*Holothrix secunda*	B, GBIF
Asteraceae	*Oedera resinifera*	B	Orchidaceae	*Holothrix villosa*	GBIF
Asteraceae	*Oedera sedifolia*	B	Orchidaceae	*Holothrix villosa var. villosa*	GBIF
Asteraceae	*Oedera speciosa*	GBIF	Orchidaceae	*Orthochilus tabularis*	GBIF
Asteraceae	*Oedera squarrosa*	B, GBIF	Orchidaceae	*Pachites bodkinii*	ST
Asteraceae	*Oedera tricephala*	GBIF	Orchidaceae	*Pterygodium acutifolium*	GBIF
Asteraceae	*Oldenburgia paradoxa*	GBIF	Orchidaceae	*Pterygodium catholicum*	B, GBIF
Asteraceae	*Oligocarpus calendulaceus*	B	Orchidaceae	*Pterygodium inversum*	GBIF
Asteraceae	*Oncosiphon pilulifer*	B	Orchidaceae	*Pterygodium orobanchoides*	GBIF
Asteraceae	*Osteospermum ilicifolium*	GBIF	Orchidaceae	*Pterygodium pentherianum*	B
Asteraceae	*Osteospermum moniliferum*	GBIF	Orchidaceae	*Pterygodium platypetalum*	B, GBIF, VM
Asteraceae	*Osteospermum moniliferum subsp. moniliferum*	GBIF	Orchidaceae	*Pterygodium schelpei*	B, GBIF
Asteraceae	*Osteospermum polygaloides*	GBIF	Orchidaceae	*Pterygodium volucris*	B, GBIF
Asteraceae	*Osteospermum scariosum*	GBIF	Orchidaceae	*Satyrium bicorne*	GBIF
Asteraceae	*Osteospermum sinuatum*	GBIF	Orchidaceae	*Satyrium erectum*	B, GBIF
Asteraceae	*Othonna arbuscula*	B	Orchidaceae	*Satyrium humile*	GBIF
Asteraceae	*Othonna auriculifolia*	B, GBIF	Orchidaceae	*Satyrium pumilum*	GBIF
Asteraceae	*Othonna gymnodiscus*	GBIF	Orchidaceae	*Satyrium rupestre*	GBIF
Asteraceae	*Othonna hederifolia*	GBIF	Orchidaceae	*Satyrium* sp.	GBIF
Asteraceae	*Othonna lobata*	B	Orchidaceae	*Schizodium bifidum*	B
Asteraceae	*Othonna oleracea*	GBIF	Orobanchaceae	*Harveya bodkinii*	GBIF
Asteraceae	*Othonna parviflora*	B, GBIF	Orobanchaceae	*Harveya purpurea*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Othonna perfoliata*	GBIF	Orobanchaceae	*Harveya purpurea subsp. purpurea*	GBIF
Asteraceae	*Othonna protecta*	B	Orobanchaceae	*Hyobanche glabrata*	B, GBIF
Asteraceae	*Othonna quinquedentata*	B	Orobanchaceae	*Hyobanche sanguinea*	B, GBIF
Asteraceae	*Othonna ramulosa*	B, GBIF	Orobanchaceae	*Phelipanche nana*	GBIF
Asteraceae	*Othonna retrofracta*	GBIF	Osmundaceae	*Osmunda regalis*	B
Asteraceae	*Othonna undulosa*	GBIF	Osmundaceae	*Todea barbara*	GBIF
Asteraceae	*Pegolettia baccaridifolia*	GBIF	Oxalidaceae	*Oxalis bifida*	GBIF
Asteraceae	*Pentatrichia kuntzei*	GBIF	Oxalidaceae	*Oxalis burkei*	GBIF
Asteraceae	*Pentzia dentata*	GBIF	Oxalidaceae	*Oxalis capillacea*	GBIF
Asteraceae	*Pentzia elegans*	GBIF	Oxalidaceae	*Oxalis caprina*	GBIF
Asteraceae	*Pentzia incana*	GBIF	Oxalidaceae	*Oxalis ciliaris*	B, GBIF
Asteraceae	*Phymaspermum trifidum*	GBIF	Oxalidaceae	*Oxalis commutata*	GBIF
Asteraceae	*Pteronia aspalatha*	B	Oxalidaceae	*Oxalis convexula*	B, GBIF
Asteraceae	*Pteronia aspera*	GBIF	Oxalidaceae	*Oxalis depressa*	B, GBIF
Asteraceae	*Pteronia bolusii*	B	Oxalidaceae	*Oxalis dregei*	GBIF
Asteraceae	*Pteronia cinerea*	B, GBIF	Oxalidaceae	*Oxalis eckloniana*	B, GBIF
Asteraceae	*Pteronia elongata*	GBIF	Oxalidaceae	*Oxalis eckloniana* var. *eckloniana*	B
Asteraceae	*Pteronia fasciculata*	GBIF	Oxalidaceae	*Oxalis engleriana*	GBIF
Asteraceae	*Pteronia fastigiata*	B	Oxalidaceae	*Oxalis fergusoniae*	GBIF
Asteraceae	*Pteronia flexicaulis*	GBIF	Oxalidaceae	*Oxalis fibrosa*	B, GBIF
Asteraceae	*Pteronia glauca*	B	Oxalidaceae	*Oxalis flava*	GBIF
Asteraceae	*Pteronia glomerata*	B, GBIF	Oxalidaceae	*Oxalis flava* var. *flava*	B, GBIF
Asteraceae	*Pteronia hutchinsoniana*	GBIF	Oxalidaceae	*Oxalis heterophylla*	B, GBIF
Asteraceae	*Pteronia incana*	GBIF	Oxalidaceae	*Oxalis inaequalis*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Pteronia membranacea*	B	Oxalidaceae	*Oxalis incarnata*	B
Asteraceae	*Pteronia oblanceolata*	B	Oxalidaceae	*Oxalis leptogramma*	GBIF
Asteraceae	*Pteronia paniculata*	B, GBIF	Oxalidaceae	*Oxalis lindaviana*	B
Asteraceae	*Pulicaria scabra*	B, GBIF	Oxalidaceae	*Oxalis melanosticta*	GBIF
Asteraceae	*Relhania calycina* subsp. *apiculata*	B	Oxalidaceae	*Oxalis melanosticta var. melanosticta*	GBIF
Asteraceae	*Relhania tricephala*	B	Oxalidaceae	*Oxalis multicaulis*	B
Asteraceae	*Rhynchopsidium sessiliflorum*	GBIF	Oxalidaceae	*Oxalis obtusa*	B, GBIF
Asteraceae	*Rosenia humilis*	B	Oxalidaceae	*Oxalis orbicularis*	GBIF
Asteraceae	*Schistostephium umbellatum*	B	Oxalidaceae	*Oxalis pardalis*	B
Asteraceae	*Senecio abbreviatus*	GBIF	Oxalidaceae	*Oxalis pes-caprae*	GBIF
Asteraceae	*Senecio agapetes*	B	Oxalidaceae	*Oxalis pes-caprae var. sericea*	GBIF
Asteraceae	*Senecio albifolius*	B	Oxalidaceae	*Oxalis pocockiae*	B, GBIF
Asteraceae	*Senecio amabilis*	B	Oxalidaceae	*Oxalis polyphylla*	GBIF
Asteraceae	*Senecio bipinnatus*	GBIF	Oxalidaceae	*Oxalis polyphylla var. polyphylla*	GBIF
Asteraceae	*Senecio chrysocoma*	B	Oxalidaceae	*Oxalis purpurea*	B
Asteraceae	*Senecio comptonii*	GBIF	Oxalidaceae	*Oxalis* sp.	GBIF
Asteraceae	*Senecio cymbalariifolius*	GBIF	Oxalidaceae	*Oxalis stellata*	GBIF
Asteraceae	*Senecio incertus*	B	Oxalidaceae	*Oxalis stenorrhyncha*	B
Asteraceae	*Senecio junceus*	GBIF	Oxalidaceae	*Oxalis truncatula*	B
Asteraceae	*Senecio lineatus*	GBIF	Papaveraceae	*Cysticapnos cracca*	GBIF
Asteraceae	*Senecio paarlensis*	B	Papaveraceae	*Eschscholzia californica* subsp. *californica*	B
Asteraceae	*Senecio paniculatus*	B, GBIF	Papaveraceae	*Fumaria muralis subsp. muralis*	GBIF
Asteraceae	*Senecio pinifolius*	B, GBIF	Peraceae	*Clutia alaternoides*	GBIF

Family	Species	Source	Family	Species	Source
Asteraceae	*Senecio pubigerus*	B	Peraceae	*Clutia alaternoides* var. *alaternoides*	B
Asteraceae	*Senecio purpureus*	GBIF	Peraceae	*Clutia laxa*	GBIF
Asteraceae	*Senecio robertiifolius*	B	Peraceae	*Clutia marginata*	B, GBIF
Asteraceae	*Senecio sarcoides*	GBIF	Peraceae	*Clutia rubricaulis*	B
Asteraceae	*Senecio umbellatus*	B	Peraceae	*Clutia tomentosa*	GBIF
Asteraceae	*Seriphium plumosum*	B, GBIF	Phytolaccaceae	*Phytolacca dioica*	GBIF
Asteraceae	*Seriphium spirale*	GBIF	Pinaceae	*Pinus pinaster*	GBIF
Asteraceae	*Stoebe aethiopica*	B, GBIF	Pinaceae	*Pinus radiata*	GBIF
Asteraceae	*Stoebe capitata*	GBIF	Piperaceae	*Peperomia retusa*	GBIF
Asteraceae	*Stoebe fusca*	B, GBIF	Pittosporaceae	*Pittosporum undulatum*	GBIF
Asteraceae	*Stoebe spiralis*	B	Plantaginaceae	*Misopates orontium*	B, GBIF
Asteraceae	*Syncarpha canescens*	GBIF	Plantaginaceae	*Misopates orontium subsp. orontium*	GBIF
Asteraceae	*Syncarpha canescens* subsp. *canescens*	B	Plantaginaceae	*Plantago cafra*	B
Asteraceae	*Syncarpha canescens subsp. tricolor*	GBIF	Plantaginaceae	*Veronica anagallis-aquatica*	GBIF
Asteraceae	*Syncarpha dregeana*	GBIF	Plantaginaceae	*Veronica persica*	GBIF
Asteraceae	*Syncarpha dykei*	B	Plumbaginaceae	*Limonium amoenum*	B
Asteraceae	*Syncarpha eximia*	GBIF	Plumbaginaceae	*Limonium sinuatum subsp. sinuatum*	GBIF
Asteraceae	*Syncarpha gnaphaloides*	GBIF	Poaceae	*Anthoxanthum dregeanum*	B
Asteraceae	*Syncarpha loganiana*	B, GBIF	Poaceae	*Aristida congesta* subsp. *congesta*	B
Asteraceae	*Syncarpha staehelina*	B, GBIF	Poaceae	*Arundo donax*	GBIF
Asteraceae	*Syncarpha variegata*	GBIF	Poaceae	*Briza maxima*	B, GBIF
Asteraceae	*Syncarpha vestita*	B	Poaceae	*Briza minor*	GBIF
Asteraceae	*Tripteris aghillana*	B	Poaceae	*Bromus diandrus*	B

Family	Species	Source	Family	Species	Source
Asteraceae	*Ursinia anethoides*	GBIF	Poaceae	*Bromus pectinatus*	B, GBIF
Asteraceae	*Ursinia anthemoides*	GBIF	Poaceae	*Capeochloa arundinacea*	GBIF
Asteraceae	*Ursinia anthemoides* subsp. *anthemoides*	B, GBIF	Poaceae	*Cenchrus caudatus*	GBIF
Asteraceae	*Ursinia calenduliflora*	B	Poaceae	*Cenchrus setaceus*	GBIF
Asteraceae	*Ursinia macropoda*	B	Poaceae	*Chaetobromus involucratus* subsp. *dregeanus*	B
Asteraceae	*Ursinia nana*	GBIF	Poaceae	*Cymbopogon marginatus*	GBIF
Asteraceae	*Ursinia oreogena*	B	Poaceae	*Cynodon dactylon*	GBIF
Asteraceae	*Ursinia pilifera*	B, GBIF	Poaceae	*Digitaria eriantha*	B
Asteraceae	*Zyrphelis microcephala* subsp. *microcephala*	B	Poaceae	*Ehrharta calycina*	B, GBIF
Bartramiaceae	*Anacolia breutelii* var. *breutelii*	B	Poaceae	*Ehrharta delicatula*	B
Bartramiaceae	*Bartramia hampeana*	B, GBIF	Poaceae	*Ehrharta eburnea*	B
Bartramiaceae	*Breutelia substricta*	B	Poaceae	*Ehrharta erecta* var. *erecta*	B
Blechnaceae	*Blechnaceae*	GBIF	Poaceae	*Ehrharta longiflora*	B
Blechnaceae	*Blechnum inflexum*	B	Poaceae	*Ehrharta melicoides*	B
Blechnaceae	*Blechnum punctulatum* var. *atherstonei*	B	Poaceae	*Ehrharta thunbergii*	B, GBIF
Blechnaceae	*Lomariocycas tabularis*	GBIF	Poaceae	*Eragrostis curvula*	B
Boraginaceae	*Amsinckia menziesii*	GBIF	Poaceae	*Fingerhuthia africana*	B
Boraginaceae	*Anchusa capensis*	GBIF	Poaceae	*Hordeum capense*	B
Boraginaceae	*Lobostemon echioides*	B, GBIF	Poaceae	*Hyparrhenia hirta*	B, GBIF
Boraginaceae	*Lobostemon fruticosus*	B, GBIF	Poaceae	*Karroochloa purpurea*	B
Boraginaceae	*Lobostemon glaber*	B	Poaceae	*Koeleria capensis*	B
Boraginaceae	*Lobostemon glaucophyllus*	GBIF	Poaceae	*Melica racemosa*	B

Family	Species	Source	Family	Species	Source
Boraginaceae	*Lobostemon laevigatus*	B	Poaceae	*Melinis repens*	GBIF
Boraginaceae	*Lobostemon oederiaefolius*	B	Poaceae	*Merxmuellera stricta*	B
Brassicaceae	*Alyssum minutum*	B, GBIF	Poaceae	*Paspalum dilatatum*	GBIF
Brassicaceae	*Brassica rapa*	GBIF	Poaceae	*Pentameris acinosa*	B
Brassicaceae	*Heliophila arenosa*	B	Poaceae	*Pentameris airoides* subsp. *airoides*	B
Brassicaceae	*Heliophila bulbostyla*	B, GBIF	Poaceae	*Pentameris densifolia*	B
Brassicaceae	*Heliophila carnosa*	B, GBIF	Poaceae	*Pentameris eriostoma*	GBIF
Brassicaceae	*Heliophila cornuta*	GBIF	Poaceae	*Pentameris horrida*	B
Brassicaceae	*Heliophila cornuta* var. *squamata*	B, GBIF	Poaceae	*Pentameris pallida*	B
Brassicaceae	*Heliophila crithmifolia*	B, GBIF	Poaceae	*Pentameris rigidissima*	B
Brassicaceae	*Heliophila dregeana*	B	Poaceae	*Pentaschistis airoides* subsp. *airoides*	B
Brassicaceae	*Heliophila elata*	ST	Poaceae	*Pentaschistis eriostoma*	B
Brassicaceae	*Heliophila juncea*	B, GBIF	Poaceae	*Pentaschistis horrida*	B
Brassicaceae	*Heliophila linearis var. linearifolia*	GBIF	Poaceae	*Pentaschistis pallida*	B
Brassicaceae	*Heliophila meyeri*	GBIF	Poaceae	*Pentaschistis rigidissima*	B
Brassicaceae	*Heliophila pectinata*	B, GBIF	Poaceae	*Phragmites australis*	GBIF
Brassicaceae	*Heliophila pendula*	B, GBIF	Poaceae	*Phragmites australis subsp. australis*	GBIF
Brassicaceae	*Heliophila pinnata*	B, GBIF	Poaceae	*Polypogon monspeliensis*	B
Brassicaceae	*Heliophila scoparia*	GBIF	Poaceae	*Stipagrostis zeyheri* subsp. *macropus*	B
Brassicaceae	*Heliophila scoparia var. aspera*	GBIF	Poaceae	*Tenaxia stricta*	B, GBIF
Brassicaceae	*Heliophila squamata*	B	Poaceae	*Themeda triandra*	GBIF
Brassicaceae	*Heliophila suavissima*	B	Poaceae	*Tribolium hispidum*	B, GBIF

Family	Species	Source	Family	Species	Source
Brassicaceae	*Heliophila suborbicularis*	B	Poaceae	*Tribolium obliterum*	B
Brassicaceae	*Heliophila subulata*	GBIF	Poaceae	*Tribolium obtusifolium*	B
Brassicaceae	*Heliophila subulata subsp. subulata*	GBIF	Poaceae	*Tribolium purpureum*	B
Brassicaceae	*Heliophila tricuspidata*	GBIF	Poaceae	*Urochloa serrata*	GBIF
Brassicaceae	*Heliophila xylopoda*	GBIF	Polygalaceae	*Muraltia alopecuroides*	B
Brassicaceae	*Lepidium africanum* subsp. *africanum*	GBIF	Polygalaceae	*Muraltia ericaefolia*	B
Brassicaceae	*Sisymbrium capense*	GBIF	Polygalaceae	*Muraltia ericifolia*	GBIF
Bruniaceae	*Audouinia esterhuyseniae*	B	Polygalaceae	*Muraltia heisteria*	B, GBIF
Bruniaceae	*Berzelia abrotanoides*	GBIF	Polygalaceae	*Muraltia macrocarpa*	B
Bruniaceae	*Brunia noduliflora*	B, GBIF	Polygalaceae	*Muraltia muraltioides*	GBIF
Bruniaceae	*Pseudobaeckea africana*	B	Polygalaceae	*Muraltia parvifolia*	B, GBIF
Bruniaceae	*Staavia capitella*	B	Polygalaceae	*Muraltia rhamnoides*	GBIF
Bryaceae	*Bryum canariense*	B	Polygalaceae	*Muraltia spinosa*	B, GBIF
Cactaceae	*Cylindropuntia imbricata* subsp. *imbricata*	GBIF	Polygalaceae	*Polygala affinis*	GBIF
Cactaceae	*Opuntia aurantiaca*	B	Polygalaceae	*Polygala bracteolata*	GBIF
Cactaceae	*Opuntia ficus-indica*	GBIF	Polygalaceae	*Polygala fruticosa*	GBIF
Cactaceae	*Trichocereus spachianus*	GBIF	Polygalaceae	*Polygala microlopha*	GBIF
Campanulaceae	*Cyphia digitata*	GBIF	Polygalaceae	*Polygala microlopha var. microlopha*	GBIF
Campanulaceae	*Cyphia volubilis*	GBIF	Polygalaceae	*Polygala scabra*	B
Campanulaceae	*Grammatotheca bergiana*	GBIF	Polygalaceae	*Polygala teretifolia*	B, GBIF
Campanulaceae	*Lobelia capillifolia*	GBIF	Polygalaceae	*Polygala umbellata*	B
Campanulaceae	*Lobelia erinus*	GBIF	Polygalaceae	*Polygala wittebergensis*	B
Campanulaceae	*Lobelia linearis*	GBIF	Polygonaceae	*Persicaria decipiens*	GBIF

Family	Species	Source	Family	Species	Source
Campanulaceae	*Lobelia pinifolia*	GBIF	Polygonaceae	*Polygonum aviculare*	B
Campanulaceae	*Lobelia tomentosa*	GBIF	Polygonaceae	*Polygonum plebeium*	GBIF
Campanulaceae	*Prismatocarpus diffusus*	B, GBIF	Polygonaceae	*Rumex acetosella*	GBIF
Campanulaceae	*Prismatocarpus pedunculatus*	B, GBIF	Polygonaceae	*Rumex cordatus*	GBIF
Campanulaceae	*Prismatocarpus sessilis*	B	Pottiaceae	*Ephemerum namaquense*	B
Campanulaceae	*Prismatocarpus sessilis* var. *sessilis*	B	Pottiaceae	*Pseudocrossidium crinitum*	B
Campanulaceae	*Prismatocarpus tenerrimus*	B	Pottiaceae	*Tetrapterum tetragonum*	B
Campanulaceae	*Wahlenbergia capensis*	GBIF	Pottiaceae	*Triquetrella mxinwana*	B, GBIF
Campanulaceae	*Wahlenbergia cernua*	GBIF	Primulaceae	*Lysimachia arvensis*	GBIF
Campanulaceae	*Wahlenbergia neorigida*	B	Primulaceae	*Lysimachia loeflingii*	GBIF
Campanulaceae	*Wahlenbergia nodosa*	GBIF	Primulaceae	*Myrsine africana*	GBIF
Campanulaceae	*Wahlenbergia oxyphylla*	GBIF	Proteaceae	*Aulax pallasia*	B
Capparaceae	*Cadaba aphylla*	B, GBIF	Proteaceae	*Banksia speciosa*	B
Caryophyllaceae	*Dianthus bolusii*	GBIF	Proteaceae	*Brabejum stellatifolium*	GBIF
Caryophyllaceae	*Herniaria pearsonii*	GBIF	Proteaceae	*Hakea sericea*	GBIF
Caryophyllaceae	*Petrorhagia dubia*	GBIF	Proteaceae	*Leucadendron arcuatum*	B
Caryophyllaceae	*Petrorhagia prolifera*	GBIF	Proteaceae	*Leucadendron barkerae*	B, GBIF
Caryophyllaceae	*Pollichia campestris*	GBIF	Proteaceae	*Leucadendron comosum*	B
Caryophyllaceae	*Silene burchellii*	GBIF	Proteaceae	*Leucadendron comosum* subsp. *comosum*	B, GBIF
Caryophyllaceae	*Silene burchellii subsp. pilosellifolia*	GBIF	Proteaceae	*Leucadendron cordatum*	B, GBIF, ST
Caryophyllaceae	*Silene gallica*	GBIF	Proteaceae	*Leucadendron eucalyptifolium*	GBIF
Caryophyllaceae	*Silene gallica var. quinquevulnera*	GBIF	Proteaceae	*Leucadendron glaberrimum* subsp. *glaberrimum*	B

Family	Species	Source	Family	Species	Source
Caryophyllaceae	*Silene undulata*	B, GBIF	Proteaceae	*Leucadendron pubescens*	B
Caryophyllaceae	*Silene undulata subsp. undulata*	GBIF	Proteaceae	*Leucadendron rubrum*	B, GBIF
Caryophyllaceae	*Spergularia media*	GBIF	Proteaceae	*Leucadendron salignum*	B, GBIF
Caryophyllaceae	*Spergularia rubra*	GBIF	Proteaceae	*Leucadendron spissifolium* subsp. *spissifolium*	B, GBIF
Caryophyllaceae	*Stellaria media*	GBIF	Proteaceae	*Leucadendron teretifolium*	GBIF
Celastraceae	*Gloveria integrifolia*	GBIF	Proteaceae	*Leucospermum calligerum*	B, GBIF
Celastraceae	*Gymnosporia buxifolia*	GBIF	Proteaceae	*Leucospermum catherinae*	B
Celastraceae	*Maytenus acuminata*	GBIF	Proteaceae	*Leucospermum cordifolium*	GBIF
Celastraceae	*Maytenus acuminata* var. *acuminata*	B, GBIF	Proteaceae	*Leucospermum reflexum*	GBIF
Celastraceae	*Maytenus oleoides*	B, GBIF	Proteaceae	*Leucospermum spathulatum*	B
Celastraceae	*Pterocelastrus tricuspidatus*	GBIF	Proteaceae	*Leucospermum tottum*	B
Colchicaceae	*Colchicum burchellii* subsp. *burchellii*	GBIF	Proteaceae	*Mimetes cucullatus*	B, GBIF
Colchicaceae	*Colchicum cuspidatum*	B, GBIF	Proteaceae	*Paranomus candicans*	B
Colchicaceae	*Ornithoglossum undulatum*	GBIF	Proteaceae	*Protea acaulos*	B
Colchicaceae	*Wurmbea inusta*	GBIF	Proteaceae	*Protea acuminata*	B
Colchicaceae	*Wurmbea marginata*	GBIF	Proteaceae	*Protea amplexicaulis*	B
Colchicaceae	*Wurmbea variabilis*	GBIF	Proteaceae	*Protea aurea subsp. aurea*	GBIF
Commelinaceae	*Commelina africana*	GBIF	Proteaceae	*Protea canaliculata*	B, GBIF
Commelinaceae	*Commelina africana* subsp. *africana*	GBIF	Proteaceae	*Protea coronata*	GBIF
Convolvulaceae	*Ipomoea albivenia*	B	Proteaceae	*Protea cynaroides*	GBIF
Crassulaceae	*Adromischus caryophyllaceus*	GBIF	Proteaceae	*Protea effusa*	B

Family	Species	Source	Family	Species	Source
Crassulaceae	*Adromischus filicaulis*	B, GBIF	Proteaceae	*Protea eximia*	B, GBIF
Crassulaceae	*Adromischus filicaulis* subsp. *marlothii*	B, GBIF	Proteaceae	*Protea grandiceps*	GBIF
Crassulaceae	*Adromischus leucophyllus*	B	Proteaceae	*Protea humiflora*	GBIF
Crassulaceae	*Adromischus maculatus*	GBIF	Proteaceae	*Protea laevis*	B, GBIF
Crassulaceae	*Adromischus triflorus*	B, GBIF	Proteaceae	*Protea lanceolata*	GBIF
Crassulaceae	*Cotyledon cuneata*	GBIF	Proteaceae	*Protea laurifolia*	B, GBIF
Crassulaceae	*Cotyledon orbiculata*	GBIF	Proteaceae	*Protea lorifolia*	B, GBIF
Crassulaceae	*Cotyledon orbiculata var. orbiculata*	GBIF	Proteaceae	*Protea magnifica*	B, GBIF
Crassulaceae	*Cotyledon orbiculata var. spuria*	GBIF	Proteaceae	*Protea neriifolia*	B, GBIF
Crassulaceae	*Cotyledon papillaris*	GBIF	Proteaceae	*Protea nitida*	B, GBIF
Crassulaceae	*Crassula arborescens*	GBIF	Proteaceae	*Protea pendula*	B
Crassulaceae	*Crassula atropurpurea*	GBIF	Proteaceae	*Protea punctata*	B, GBIF
Crassulaceae	*Crassula atropurpurea var. anomala*	GBIF	Proteaceae	*Protea repens*	B, GBIF
Crassulaceae	*Crassula atropurpurea* var. *atropurpurea*	B	Proteaceae	*Protea revoluta*	B, GBIF
Crassulaceae	*Crassula atropurpurea* var. *purcellii*	B	Proteaceae	*Protea rupicola*	ST
Crassulaceae	*Crassula atropurpurea* var. *watermeyeri*	B	Proteaceae	*Protea scabriuscula*	B
Crassulaceae	*Crassula barbata*	GBIF	Proteaceae	*Protea scolopendriifolia*	B, GBIF
Crassulaceae	*Crassula biplanata*	GBIF	Proteaceae	*Protea* sp.	GBIF
Crassulaceae	*Crassula campestris*	GBIF	Proteaceae	*Protea subulifolia*	B
Crassulaceae	*Crassula capitella* subsp. *thyrsiflora*	GBIF	Proteaceae	*Protea sulphurea*	B, GBIF
Crassulaceae	*Crassula ciliata*	GBIF	Proteaceae	*Protea welwitschii*	B

Family	Species	Source	Family	Species	Source
Crassulaceae	*Crassula clavata*	GBIF	Proteaceae	*Protea witzenbergiana*	B
Crassulaceae	*Crassula columnaris*	GBIF	Proteaceae	*Serruria acrocarpa*	B
Crassulaceae	*Crassula columnaris* subsp. *columnaris*	GBIF	Proteaceae	*Serruria balanocephala*	GBIF
Crassulaceae	*Crassula cotyledonis*	GBIF	Proteaceae	*Serruria decipiens*	B
Crassulaceae	*Crassula decumbens* var. *decumbens*	GBIF	Proteaceae	*Serruria dodii*	B
Crassulaceae	*Crassula deltoidea*	GBIF	Proteaceae	*Serruria gremialis*	B
Crassulaceae	*Crassula dependens*	B	Proteaceae	*Sorocephalus lanatus*	B
Crassulaceae	*Crassula expansa*	GBIF	Proteaceae	*Spatalla incurva*	B
Crassulaceae	*Crassula expansa* subsp. *expansa*	GBIF	Proteaceae	*Vexatorella latebrosa*	GBIF
Crassulaceae	*Crassula hemisphaerica*	GBIF	Proteaceae	*Vexatorella obtusata*	B
Crassulaceae	*Crassula lanceolata* subsp. *lanceolata*	GBIF	Proteaceae	*Vexatorella obtusata subsp. albomontana*	GBIF
Crassulaceae	*Crassula montana*	GBIF	Proteaceae	*Vexatorella obtusata* subsp. *obtusata*	B, GBIF
Crassulaceae	*Crassula montana* subsp. *montana*	GBIF	Pteridaceae	*Adiantum aethiopicum*	B
Crassulaceae	*Crassula multiflora*	GBIF	Pteridaceae	*Cheilanthes capensis*	GBIF
Crassulaceae	*Crassula multiflora* subsp. *multiflora*	GBIF	Pteridaceae	*Cheilanthes contracta*	B
Crassulaceae	*Crassula muricata*	GBIF	Pteridaceae	*Cheilanthes hastata*	GBIF
Crassulaceae	*Crassula muscosa*	GBIF	Pteridaceae	*Cheilanthes parviloba*	GBIF
Crassulaceae	*Crassula muscosa* var. *muscosa*	B, GBIF	Pteridaceae	*Pellaea calomelanos*	GBIF
Crassulaceae	*Crassula natans*	GBIF	Pteridaceae	*Pellaea pteroides*	GBIF
Crassulaceae	*Crassula natans var. natans*	GBIF	Pylaisiadelphaceae	*Isopterygium tenerum*	B
Crassulaceae	*Crassula nemorosa*	GBIF	Ranunculaceae	*Clematis brachiata*	GBIF
Crassulaceae	*Crassula nudicaulis*	B, GBIF	Ranunculaceae	*Knowltonia tenuifolia*	GBIF

Family	Species	Source	Family	Species	Source
Crassulaceae	*Crassula nudicaulis var. platyphylla*	GBIF	Ranunculaceae	*Knowltonia vesicatoria subsp. vesicatoria*	GBIF
Crassulaceae	*Crassula obtusa*	GBIF	Ranunculaceae	*Myosurus minimus*	GBIF
Crassulaceae	*Crassula orbicularis*	GBIF	Ranunculaceae	*Ranunculus multifidus*	GBIF
Crassulaceae	*Crassula pageae*	GBIF	Restionaceae	*Anthochortus ecklonii*	B
Crassulaceae	*Crassula pellucida*	GBIF	Restionaceae	*Askidiosperma capitatum*	B
Crassulaceae	*Crassula perforata*	GBIF	Restionaceae	*Askidiosperma nitidum*	B
Crassulaceae	*Crassula perforata* subsp. *perforata*	GBIF	Restionaceae	*Cannomois aristata*	GBIF
Crassulaceae	*Crassula pubescens*	GBIF	Restionaceae	*Cannomois congesta*	GBIF
Crassulaceae	*Crassula pubescens* subsp. *pubescens*	B	Restionaceae	*Cannomois parviflora*	B, GBIF
Crassulaceae	*Crassula pyramidalis*	GBIF	Restionaceae	*Cannomois primosii*	B
Crassulaceae	*Crassula rupestris*	GBIF	Restionaceae	*Cannomois robusta*	B
Crassulaceae	*Crassula rupestris* subsp. *rupestris*	GBIF	Restionaceae	*Cannomois scirpoides*	B
Crassulaceae	*Crassula saxifraga*	GBIF	Restionaceae	*Cannomois virgata*	B
Crassulaceae	*Crassula sebaeoides*	GBIF	Restionaceae	*Elegia asperiflora*	B
Crassulaceae	*Crassula strigosa*	GBIF	Restionaceae	*Elegia capensis*	B
Crassulaceae	*Crassula subaphylla*	GBIF	Restionaceae	*Elegia filacea*	B
Crassulaceae	*Crassula subulata*	GBIF	Restionaceae	*Elegia stokoei*	B
Crassulaceae	*Crassula subulata* var. *hispida*	GBIF	Restionaceae	*Hydrophilus rattrayi*	B
Crassulaceae	*Crassula subulata* var. *subulata*	GBIF	Restionaceae	*Hypodiscus laevigatus*	GBIF
Crassulaceae	*Crassula tetragona*	GBIF	Restionaceae	*Hypodiscus neesii*	B
Crassulaceae	*Crassula tetragona* subsp. *lignescens*	GBIF	Restionaceae	*Hypodiscus striatus*	B
Crassulaceae	*Crassula tetragona* subsp. *tetragona*	GBIF	Restionaceae	*Ischyrolepis sieberi*	B

Family	Species	Source	Family	Species	Source
Crassulaceae	*Crassula thunbergiana* subsp. *thunbergiana*	GBIF	Restionaceae	*Restio aridus*	ST
Crassulaceae	*Crassula tomentosa*	GBIF	Restionaceae	*Restio aridus*	B
Crassulaceae	*Crassula tomentosa* var. *tomentosa*	GBIF	Restionaceae	*Restio capensis*	GBIF
Crassulaceae	*Crassula umbella*	GBIF	Restionaceae	*Restio distichus*	B
Crassulaceae	*Crassula umbellata*	GBIF	Restionaceae	*Restio distractus*	B
Crassulaceae	*Crassula vaillantii*	GBIF	Restionaceae	*Restio distylis*	B
Crassulaceae	*Tylecodon cacalioides*	GBIF	Restionaceae	*Restio laniger*	B
Crassulaceae	*Tylecodon paniculatus*	B, GBIF	Restionaceae	*Restio luxurians*	B, GBIF
Crassulaceae	*Tylecodon reticulatus*	GBIF	Restionaceae	*Restio nanus*	GBIF
Crassulaceae	*Tylecodon reticulatus subsp. reticulatus*	GBIF	Restionaceae	*Restio ocreatus*	B
Crassulaceae	*Tylecodon ventricosus*	GBIF	Restionaceae	*Restio paniculatus*	B, GBIF
Crassulaceae	*Tylecodon wallichii*	GBIF	Restionaceae	*Restio perplexus*	B
Crassulaceae	*Tylecodon wallichii* subsp. *wallichii*	B, GBIF	Restionaceae	*Restio quadratus*	GBIF
Cucurbitaceae	*Cucumis myriocarpus*	GBIF	Restionaceae	*Restio rudolfii*	B
Cucurbitaceae	*Kedrostis capensis*	B, GBIF	Restionaceae	*Restio sieberi*	GBIF
Cucurbitaceae	*Kedrostis nana var. zeyheri*	GBIF	Restionaceae	*Restio strobilifer*	B
Cunoniaceae	*Cunonia capensis*	GBIF	Restionaceae	*Restio triticeus*	GBIF
Cupressaceae	*Widdringtonia nodiflora*	GBIF	Restionaceae	*Restio venustulus*	B
Cyatheaceae	*Cyathea capensis*	GBIF	Restionaceae	*Restio vimineus*	GBIF
Cyperaceae	*Carex capensis*	GBIF	Restionaceae	*Restio virgeus*	GBIF
Cyperaceae	*Cyperus marginatus*	B	Restionaceae	*Restio wittebergensis*	GBIF
Cyperaceae	*Cyperus nitidus*	GBIF	Restionaceae	*Rhodocoma capensis*	GBIF

Family	Species	Source	Family	Species	Source
Cyperaceae	*Cyperus polystachyos* var. *polystachyos*	GBIF	Restionaceae	*Rhodocoma fruticosa*	GBIF
Cyperaceae	*Cyperus thunbergii*	GBIF	Restionaceae	*Staberoha cernua*	B
Cyperaceae	*Eleocharis limosa*	GBIF	Restionaceae	*Staberoha distachyos*	B
Cyperaceae	*Ficinia brevifolia*	GBIF	Restionaceae	*Thamnochortus acuminatus*	B
Cyperaceae	*Ficinia deusta*	GBIF	Restionaceae	*Thamnochortus cinereus*	B
Cyperaceae	*Ficinia esterhuyseniae*	B	Restionaceae	*Thamnochortus fruticosus*	GBIF
Cyperaceae	*Ficinia marginata*	GBIF	Restionaceae	*Thamnochortus platypteris*	B
Cyperaceae	*Ficinia nigrescens*	GBIF	Restionaceae	*Thamnochortus schlechteri*	B
Cyperaceae	*Ficinia nodosa*	GBIF	Restionaceae	*Willdenowia arescens*	GBIF
Cyperaceae	*Ficinia stolonifera*	B	Restionaceae	*Willdenowia bolusii*	B
Cyperaceae	*Fuirena hirsuta*	GBIF	Rhamnaceae	*Noltea africana*	GBIF
Cyperaceae	*Isolepis digitata*	GBIF	Rhamnaceae	*Phylica ambigua*	B
Cyperaceae	*Isolepis prolifera*	B, GBIF	Rhamnaceae	*Phylica buxifolia*	B
Cyperaceae	*Tetraria involucrata*	GBIF	Rhamnaceae	*Phylica debilis*	B
Cyperaceae	*Tetraria ustulata*	GBIF	Rhamnaceae	*Phylica excelsa* var. *excelsa*	B
Cytinaceae	*Cytinus sanguineus*	B, GBIF	Rhamnaceae	*Phylica mairei*	ST
Dennstaedtiaceae	*Pteridium aquilinum subsp. capense*	GBIF	Rhamnaceae	*Phylica odorata*	B, GBIF
Dipsacaceae	*Scabiosa columbaria*	B, GBIF	Rosaceae	*Acaena latebrosa*	B, GBIF
Ditrichaceae	*Ceratodon purpureus* subsp. *stenocarpus*	B	Rosaceae	*Cliffortia atrata*	B
Droseraceae	*Drosera acaulis*	B	Rosaceae	*Cliffortia baccans*	B
Droseraceae	*Drosera aliciae*	GBIF	Rosaceae	*Cliffortia crenata*	B, GBIF
Droseraceae	*Drosera capensis*	B	Rosaceae	*Cliffortia cristata*	B
Droseraceae	*Drosera cistiflora*	GBIF	Rosaceae	*Cliffortia erectisepala*	GBIF

Family	Species	Source	Family	Species	Source
Droseraceae	*Drosera ramentacea*	GBIF	Rosaceae	*Cliffortia gracillima*	GBIF
Droseraceae	*Drosera trinervia*	B, GBIF	Rosaceae	*Cliffortia hantamensis*	GBIF
Droseraceae	*Drosera zeyheri*	GBIF	Rosaceae	*Cliffortia neglecta*	GBIF
Ebenaceae	*Diospyros austroafricana*	GBIF	Rosaceae	*Cliffortia odorata*	GBIF
Ebenaceae	*Diospyros glabra*	B, GBIF	Rosaceae	*Cliffortia pulchella*	GBIF
Ebenaceae	*Euclea polyandra*	GBIF	Rosaceae	*Cliffortia ruscifolia*	GBIF
Ebenaceae	*Euclea undulata*	GBIF	Rosaceae	*Cliffortia sericea*	GBIF
Ericaceae	*Erica abietina* subsp. *aurantiaca*	B	Rosaceae	*Cliffortia strobilifera*	B, GBIF
Ericaceae	*Erica anguliger*	B, GBIF	Rubiaceae	*Anthospermum galioides*	GBIF
Ericaceae	*Erica arcuata*	B	Rubiaceae	*Anthospermum spathulatum*	GBIF
Ericaceae	*Erica areolata*	B	Rubiaceae	*Carpacoce scabra*	GBIF
Ericaceae	*Erica articularis*	GBIF	Rubiaceae	*Galium tomentosum*	GBIF
Ericaceae	*Erica benthamiana*	B	Rubiaceae	*Nenax velutina*	ST
Ericaceae	*Erica bergiana*	GBIF	Rubiaceae	*Rubia petiolaris*	GBIF
Ericaceae	*Erica bruniades*	B	Ruscaceae	*Eriospermum bayeri*	B
Ericaceae	*Erica caffra*	GBIF	Rutaceae	*Acmadenia matroosbergensis*	B, GBIF, ST
Ericaceae	*Erica caffra* var. *caffra*	B, GBIF	Rutaceae	*Acmadenia sheilae*	GBIF
Ericaceae	*Erica calycina*	GBIF	Rutaceae	*Acmadenia teretifolia*	B
Ericaceae	*Erica calycina* var. *calycina*	B	Rutaceae	*Adenandra mundiifolia*	GBIF
Ericaceae	*Erica calycina* var. *longibracteata*	B	Rutaceae	*Agathosma adenandriflora*	B
Ericaceae	*Erica cerinthoides*	GBIF	Rutaceae	*Agathosma barnesiae*	B
Ericaceae	*Erica cerinthoides* var. *cerinthoides*	B, GBIF	Rutaceae	*Agathosma capensis*	B
Ericaceae	*Erica cetrata*	B	Rutaceae	*Agathosma cerefolium*	B

Family	Species	Source	Family	Species	Source
Ericaceae	*Erica coacervata*	B	Rutaceae	*Agathosma crassifolia*	B, GBIF
Ericaceae	*Erica coccinea*	B, GBIF	Rutaceae	*Agathosma divaricata*	B
Ericaceae	*Erica coccinea subsp. coccinea*	GBIF	Rutaceae	*Agathosma foetidissima*	GBIF
Ericaceae	*Erica conspicua* subsp. *conspicua*	B	Rutaceae	*Agathosma marlothii*	B
Ericaceae	*Erica conspicua* subsp. *roseoflora*	B	Rutaceae	*Agathosma ovata*	B
Ericaceae	*Erica constantia*	ST	Rutaceae	*Agathosma pentachotoma*	B
Ericaceae	*Erica corifolia* var. *corifolia*	B	Rutaceae	*Agathosma squamosa*	B
Ericaceae	*Erica costatisepala*	ST	Rutaceae	*Agathosma subteretifolia*	B, ST
Ericaceae	*Erica cristiflora* var. *cristiflora*	B	Rutaceae	*Diosma acmaeophylla*	B
Ericaceae	*Erica curviflora*	B, GBIF	Rutaceae	*Diosma passerinoides*	ST
Ericaceae	*Erica daphniflora* var. *daphniflora*	B	Rutaceae	*Diosma pedicellata*	B
Ericaceae	*Erica daphniflora* var. *muscari*	B	Rutaceae	*Diosma strumosa*	B
Ericaceae	*Erica discolor*	GBIF	Rutaceae	*Euchaetis elsieae*	B, GBIF
Ericaceae	*Erica dodii*	B	Rutaceae	*Macrostylis tenuis*	B
Ericaceae	*Erica erasmia*	B	Salicaceae	*Populus ×canescens*	GBIF
Ericaceae	*Erica eremioides* subsp. *eremioides*	B	Salicaceae	*Salix mucronata*	GBIF
Ericaceae	*Erica glandulipila*	ST	Santalaceae	*Colpoon compressum*	GBIF
Ericaceae	*Erica glandulipila*	B	Santalaceae	*Thesidium podocarpum*	B
Ericaceae	*Erica glauca* var. *glauca*	B	Santalaceae	*Thesium carinatum*	B
Ericaceae	*Erica gnaphaloides*	B	Santalaceae	*Thesium juncifolium*	B
Ericaceae	*Erica grandiflora*	GBIF	Sapindaceae	*Dodonaea viscosa*	GBIF
Ericaceae	*Erica grandiflora subsp. grandiflora*	GBIF	Sapindaceae	*Dodonaea viscosa subsp. angustifolia*	GBIF

Family	Species	Source	Family	Species	Source
Ericaceae	*Erica grata*	GBIF	Sapotaceae	*Sideroxylon inerme subsp. inerme*	GBIF
Ericaceae	*Erica haemastoma*	B	Schizaeaceae	*Schizaea pectinata*	B, GBIF
Ericaceae	*Erica haematosiphon*	B	Scrophulariaceae	*Aptosimum indivisum*	GBIF
Ericaceae	*Erica hispiduloides*	B	Scrophulariaceae	*Buddleja saligna*	GBIF
Ericaceae	*Erica junonia var. junonia*	B	Scrophulariaceae	*Chaenostoma caeruleum*	B
Ericaceae	*Erica junonia* var. *minor*	B	Scrophulariaceae	*Chaenostoma decipiens*	B
Ericaceae	*Erica lateralis*	B, GBIF	Scrophulariaceae	*Chaenostoma glabratum*	B
Ericaceae	*Erica leptopus*	B	Scrophulariaceae	*Chaenostoma macrosiphon*	B
Ericaceae	*Erica leptopus* var. *leptopus*	B, GBIF	Scrophulariaceae	*Chaenostoma uncinatum*	B
Ericaceae	*Erica leucanthera*	B, GBIF	Scrophulariaceae	*Chenopodiopsis hirta*	B
Ericaceae	*Erica leucodesmia*	B, GBIF	Scrophulariaceae	*Cromidon varicalyx*	B
Ericaceae	*Erica leucopelta*	GBIF	Scrophulariaceae	*Diascia hexensis*	B
Ericaceae	*Erica leucopelta* var. *leucopelta*	B	Scrophulariaceae	*Diascia humilis*	B
Ericaceae	*Erica maderi*	B	Scrophulariaceae	*Diascia maculata*	B
Ericaceae	*Erica maesta* var. *maesta*	B	Scrophulariaceae	*Diascia parviflora*	B, GBIF
Ericaceae	*Erica mammosa*	B, GBIF	Scrophulariaceae	*Diascia sacculata*	B
Ericaceae	*Erica maximiliani*	B	Scrophulariaceae	*Freylinia lanceolata*	B, GBIF
Ericaceae	*Erica mira*	B	Scrophulariaceae	*Freylinia undulata*	B
Ericaceae	*Erica monsoniana*	GBIF	Scrophulariaceae	*Hemimeris centrodes*	GBIF
Ericaceae	*Erica monsoniana* var. *monsoniana*	B, GBIF	Scrophulariaceae	*Hemimeris racemosa*	B
Ericaceae	*Erica nubigena*	B	Scrophulariaceae	*Jamesbrittenia atropurpurea*	GBIF
Ericaceae	*Erica nudiflora*	GBIF	Scrophulariaceae	*Lyperia antirrhinoides*	B, GBIF
Ericaceae	*Erica orculiflora*	B, GBIF	Scrophulariaceae	*Lyperia formosa*	B, GBIF

Family	Species	Source	Family	Species	Source
Ericaceae	*Erica oresigena*	B	Scrophulariaceae	*Lyperia tristis*	GBIF
Ericaceae	*Erica palliiflora*	B	Scrophulariaceae	*Manulea cheiranthus*	GBIF
Ericaceae	*Erica parilis*	GBIF	Scrophulariaceae	*Manulea minor*	B
Ericaceae	*Erica parilis* var. *parilis*	B, GBIF	Scrophulariaceae	*Microdon dubius*	B, GBIF
Ericaceae	*Erica parilis* var. *parviflora*	B, GBIF	Scrophulariaceae	*Microdon parviflorus*	GBIF
Ericaceae	*Erica penicilliformis*	GBIF	Scrophulariaceae	*Microdon polygaloides*	B
Ericaceae	*Erica peziza*	GBIF	Scrophulariaceae	*Nemesia barbata*	GBIF
Ericaceae	*Erica plukenetii*	B, GBIF	Scrophulariaceae	*Nemesia diffusa* var. *diffusa*	B
Ericaceae	*Erica plukenetii* subsp. *plukenetii*	B, GBIF	Scrophulariaceae	*Nemesia leipoldtii*	B
Ericaceae	*Erica polycoma*	B	Scrophulariaceae	*Nemesia pageae*	B, GBIF
Ericaceae	*Erica pubescens*	GBIF	Scrophulariaceae	*Oftia africana*	GBIF
Ericaceae	*Erica quadrangularis*	B	Scrophulariaceae	*Phyllopodium elegans*	GBIF
Ericaceae	*Erica racemosa* var. *racemosa*	B	Scrophulariaceae	*Polycarena aurea*	B
Ericaceae	*Erica rigidula*	B	Scrophulariaceae	*Polycarena rariflora*	B
Ericaceae	*Erica setacea*	GBIF	Scrophulariaceae	*Selago albida*	B
Ericaceae	*Erica setulosa*	ST	Scrophulariaceae	*Selago corymbosa*	GBIF
Ericaceae	*Erica setulosa*	B	Scrophulariaceae	*Selago dolosa*	GBIF
Ericaceae	*Erica sphaerocephala*	B	Scrophulariaceae	*Selago eckloniana*	B, GBIF
Ericaceae	*Erica steinbergiana* var. *steinbergiana*	B	Scrophulariaceae	*Selago geniculata*	B
Ericaceae	*Erica tegetiformis*	B, GBIF	Scrophulariaceae	*Selago gloiodes*	B
Ericaceae	*Erica tenuifolia*	B	Scrophulariaceae	*Selago glutinosa*	B, GBIF
Ericaceae	*Erica tenuis*	B	Scrophulariaceae	*Selago gracilis*	B
Ericaceae	*Erica terniflora*	B	Scrophulariaceae	*Selago hispida*	GBIF
Ericaceae	*Erica totta*	B, GBIF	Scrophulariaceae	*Selago triquetra*	B

Family	Species	Source	Family	Species	Source
Ericaceae	*Erica transparens*	B	Scrophulariaceae	*Sutera foetida*	GBIF
Ericaceae	*Erica tumida* var. *minor*	B	Scrophulariaceae	*Sutera glabrata*	B
Ericaceae	*Erica tumida* var. *tumida*	B	Scrophulariaceae	*Teedia lucida*	B, GBIF
Ericaceae	*Erica verecunda*	B	Scrophulariaceae	*Zaluzianskya capensis*	GBIF
Ericaceae	*Erica vestita*	GBIF	Scrophulariaceae	*Zaluzianskya ovata*	B
Ericaceae	*Erica viscaria*	B	Solanaceae	*Datura stramonium*	GBIF
Euphorbiaceae	*Euphorbia clandestina*	GBIF	Solanaceae	*Solanum guineense*	GBIF
Euphorbiaceae	*Euphorbia eustacei*	B	Solanaceae	*Solanum linnaeanum*	GBIF
Euphorbiaceae	*Euphorbia genistoides*	B, GBIF	Solanaceae	*Solanum mauritianum*	GBIF
Euphorbiaceae	*Euphorbia hamata*	B	Solanaceae	*Solanum nigrum*	GBIF
Euphorbiaceae	*Euphorbia heptagona*	GBIF	Solanaceae	*Solanum retroflexum*	GBIF
Euphorbiaceae	*Euphorbia mauritanica*	GBIF	Solanaceae	*Solanum tomentosum*	GBIF
Euphorbiaceae	*Euphorbia nesemannii*	GBIF	Stilbaceae	*Halleria elliptica*	GBIF
Euphorbiaceae	*Euphorbia rhombifolia*	GBIF	Stilbaceae	*Halleria lucida*	GBIF
Euphorbiaceae	*Euphorbia silenifolia*	GBIF	Stilbaceae	*Halleria ovata*	B
Euphorbiaceae	*Euphorbia stolonifera*	GBIF	Stilbaceae	*Ixianthes retzioides*	B
Euphorbiaceae	*Euphorbia tenax*	GBIF	Targioniaceae	*Targionia hypophylla*	B
Euphorbiaceae	*Euphorbia tuberosa*	B, GBIF	Tecophilaeaceae	*Cyanella hyacinthoides*	GBIF
Euphorbiaceae	*Ricinus communis*	GBIF	Tecophilaeaceae	*Cyanella lutea*	GBIF
Fabaceae	*Acacia mearnsii*	GBIF	Tecophilaeaceae	*Cyanella lutea* subsp. *lutea*	GBIF
Fabaceae	*Acacia saligna*	GBIF	Thesiaceae	*Lacomucinaea lineata*	GBIF
Fabaceae	*Amphithalea ciliaris*	B	Thesiaceae	*Thesium funale*	GBIF
Fabaceae	*Amphithalea muraltioides*	B	Thesiaceae	*Thesium strictum*	GBIF
Fabaceae	*Amphithalea pageae*	GBIF	Thurniaceae	*Prionium serratum*	GBIF

Family	Species	Source	Family	Species	Source
Fabaceae	*Amphithalea spinosa*	B, GBIF, ST	Thymelaeaceae	*Gnidia anomala*	B
Fabaceae	*Amphithalea villosa*	B, GBIF	Thymelaeaceae	*Gnidia clavata*	B
Fabaceae	*Amphithalea violacea*	GBIF	Thymelaeaceae	*Gnidia geminiflora*	B
Fabaceae	*Argyrolobium argenteum*	GBIF	Thymelaeaceae	*Gnidia juniperifolia*	GBIF
Fabaceae	*Aspalathus aculeata*	ST	Thymelaeaceae	*Gnidia laxa*	GBIF
Fabaceae	*Aspalathus acuminata* subsp. *acuminata*	B, GBIF	Thymelaeaceae	*Gnidia nitida*	B
Fabaceae	*Aspalathus aemula*	B	Thymelaeaceae	*Gnidia oppositifolia*	B, GBIF
Fabaceae	*Aspalathus alpestris*	B, GBIF	Thymelaeaceae	*Lachnaea eriocephala*	B
Fabaceae	*Aspalathus angustifolia* subsp. *angustifolia*	B	Thymelaeaceae	*Lachnaea oliverorum*	B, GBIF, ST
Fabaceae	*Aspalathus angustifolia* subsp. *robusta*	B	Thymelaeaceae	*Passerina comosa*	B
Fabaceae	*Aspalathus arida* subsp. *arida*	B	Thymelaeaceae	*Passerina filiformis* subsp. *filiformis*	B
Fabaceae	*Aspalathus bracteata*	B	Thymelaeaceae	*Passerina obtusifolia*	GBIF
Fabaceae	*Aspalathus candicans*	GBIF	Thymelaeaceae	*Passerina truncata* subsp. *truncata*	B
Fabaceae	*Aspalathus cliffortioides*	B	Thymelaeaceae	*Struthiola ciliata*	GBIF
Fabaceae	*Aspalathus corrudifolia*	B	Thymelaeaceae	*Struthiola eckloniana*	GBIF
Fabaceae	*Aspalathus costulata*	B	Thymelaeaceae	*Struthiola leptantha*	B
Fabaceae	*Aspalathus cymbiformis*	B	Urticaceae	*Urtica lobulata*	B
Fabaceae	*Aspalathus divaricata* subsp. *divaricata*	B	Viscaceae	*Viscum capense*	GBIF
Fabaceae	*Aspalathus filicaulis*	B	Viscaceae	*Viscum rotundifolium*	GBIF
Fabaceae	*Aspalathus grandiflora*	B	Vitaceae	*Cyphostemma sandersonii*	B
Fabaceae	*Aspalathus hirta* subsp. *hirta*	B, GBIF	Withheld	Sensitive Species 1004	GBIF, ST

Family	Species	Source	Family	Species	Source
Fabaceae	*Aspalathus hispida*	GBIF	Withheld	Sensitive Species 1209	ST
Fabaceae	*Aspalathus juniperina* subsp. *monticola*	B	Withheld	Sensitive Species 142	ST
Fabaceae	*Aspalathus lactea* subsp. *lactea*	B	Withheld	Sensitive Species 207	B, ST
Fabaceae	*Aspalathus laeta*	GBIF	Withheld	Sensitive Species 508	ST
Fabaceae	*Aspalathus lanceifolia*	B	Withheld	Sensitive Species 521	ST
Fabaceae	*Aspalathus leucophylla*	B	Withheld	Sensitive Species 654	ST
Fabaceae	*Aspalathus macrocarpa*	GBIF	Zygophyllaceae	*Roepera flexuosa*	B
Fabaceae	*Aspalathus muraltioides*	ST	Zygophyllaceae	*Roepera foetida*	GBIF
Fabaceae	*Aspalathus nigra*	B, GBIF	Zygophyllaceae	*Roepera fulva*	B, GBIF
Fabaceae	*Aspalathus nudiflora*	B	Zygophyllaceae	*Roepera pygmaea*	B
Fabaceae	*Aspalathus pachyloba* subsp. *pachyloba*	B	Zygophyllaceae	*Tribulus terrestris*	GBIF

ERM HAS OVER 160 OFFICES ACROSS THE FOLLOWING COUNTRIES AND TERRITORIES WORLDWIDE

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
France
Germany
Ghana
Guyana
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
The Netherlands
New Zealand
Peru
Poland
Portugal
Puerto Rico
Romania
Senegal
Singapore
South Africa
South Korea
Spain
Switzerland
Taiwan
Tanzania
Thailand
UAE
UK
US
Vietnam

ERM's Cape Town Office
1st Floor
Great Westerford
240 Main Road, Rondebosch
Cape Town, 7700

T: +27 21 681 5400
F: +27 21 686 0736

www.erm.com