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MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT

TECHNICAL REPORT

UAE National Red List of Vascular Plants

2021

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2021

David Allen, James Westrip, Anna Puttick, Kate Harding, Craig Hilton-Taylor and Hassina Ali

Reviewed by MoCCaE Biodiversity Department: Ahmed Mashli, Hassina Ali, Hiba Alshehhi, Maitha Al Mheiri, Muna Alshamsi, Nahla Noobi, Obaid Alshamsi, Reem Al Mheiri

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The following botanists participated in the native plant working group held at the Sharjah Research Academy in May 2019:

Name	Affiliation
Sabitha Sakkir	Environment Agency – Abu Dhabi
Ali El-Keblawy	Department of Applied Biology, University of Sharjah
Gary Brown ¹	Independent Consultant, MOCCA
Marijcke Jongbloed ²	Independent Botanist
Gary Feulner	Independent Consultant
Mohamed Shahid	International Centre for Biosaline Agriculture, Dubai
Marina Tsaliki	Landscape Agency, Government of Ras Al Khaimah
Hassina Ali	MOCCA
Maitha Al Mheiri	MOCCA
Muna Al Shamsi	MOCCA
Tamer Mahmoud	Sharjah Seed Bank & Herbarium
Hatem Shabana	Sharjah Seed Bank & Herbarium
Sanjay Gairola	Sharjah Seed Bank & Herbarium
Dave Aplin	Sharjah Botanic Garden

¹ Attended remotely.

² Provided significant comments before and after the meeting.

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This UAE National Red List of Vascular Plants could not have been produced without reference to the 2003 book *The comprehensive guide to the wild flowers of the United*

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Executive Summary

The United Arab Emirates (UAE) comprises diverse desert, mountain, and marine habitats, where more than 1,000 species of vascular plants have been recorded. However, the country has long been a nexus of trade and movement between Asia and Africa, and many species of plants have been introduced for food, medicines, as fuelwood, and for other uses, and some of these have become naturalised and occur in natural habitats across the country. In recent decades, rapid economic development and the availability of irrigated areas and artificial wetlands have led to the introduction of plants for landscape and ornamental use, and the opportunistic arrival of other species.

In this UAE National Red List of Vascular Plants, 598 species of plants have been considered native to the country and their risk of extinction assessed, including three seagrass species (*Halodule uninervis*, *Halophila ovalis*, and *Halophila stipulacea*), in addition to the grey mangrove (*Avicennia marina*). The extinction risk of these species was assessed at the National Red List Assessment Workshop (Dubai, September 2019) through the application of the International Union for Conservation of Nature (IUCN) Red List Categories and Criteria at the regional scale. Distribution maps were compiled for all species with the exception of some Data Deficient species. The full dataset, including maps, is available here: <https://gis.moccae.gov.ae>

Of the 598 species of plants considered native to the UAE, eight species (1.3%) were assessed as Critically Endangered, 18 species (3%) as Endangered, 12 species (2%) as Vulnerable, 20 species (3.3%) as Near Threatened, 375 species (62.3%) as Least Concern, and 165 species (28.1%) as Data Deficient (DD). The best estimate of extinction risk is that 8.8% of all native vascular plant species are threatened with extinction. However, the proportion of threatened species may range between 6.4% (if no species currently

assessed as DD were found to be threatened) and 34% (if all species currently assessed as DD were found to be threatened).

The Red List Index (RLI) score for the 2019 assessment of the vascular plants of the UAE is 0.94. A score of 1 indicates that all species are Least Concern, and the lower the value, the faster the set of species is heading toward extinction. Twenty-five of the plant species assessed for this National Red List were considered to have undergone a genuine change in status between 1996 and 2019, with only one of these (*Avicennia marina*) thought to have genuinely improved; all others were thought to have deteriorated. As a result, the RLI declined from 0.96 in 1996 to 0.94 in 2019, indicating an increase in regional extinction risk of the plants of the UAE. Direct comparisons with global plant trends are limited by the fact that only 71 of the country's species have published assessments at the global scale, with all of these species assessed as LC at the global scale (i.e., an RLI score of 1). The UAE RLI score for this restricted subset of species is 0.9, showing that the UAE comparison species are more threatened than the species are at a global scale.

The UAE RLI score indicates that the country's plants are overall much less threatened than its mammals, which had a score of 0.63 in a 2018 assessment (Mallon et al. 2019), and slightly less threatened than the herpetofauna, which had a score of 0.9 in the 2018 assessment (Els et al. 2019). However, the threatened species require continued conservation action to avoid a lower RLI score when the assessments are next repeated. Further research on the Data Deficient species is also required so that their risk of extinction can be better estimated. At present, 165 species are considered DD, with many of these range-restricted species found in the mountains of the UAE.

1. Introduction

1.1 The United Arab Emirates context

The United Arab Emirates (UAE) is a federation of seven emirates (Abu Dhabi, Ajman, Dubai, Fujairah, Ras Al Khaimah, Sharjah, Umm Al Quwain) in the southeast of the Arabian Peninsula. It lies between 22°30' and 26°10'N

and 51° and 56°25'E. It shares land borders with Oman and Saudi Arabia, and has coastlines bordering the Arabian Gulf and the Sea of Oman. The country's total population (residents and Emirati citizens) was 9,304,277 in 2017, as compared to 9,121,167 in 2016, with the population showing significant growth in recent years (Figure 1).

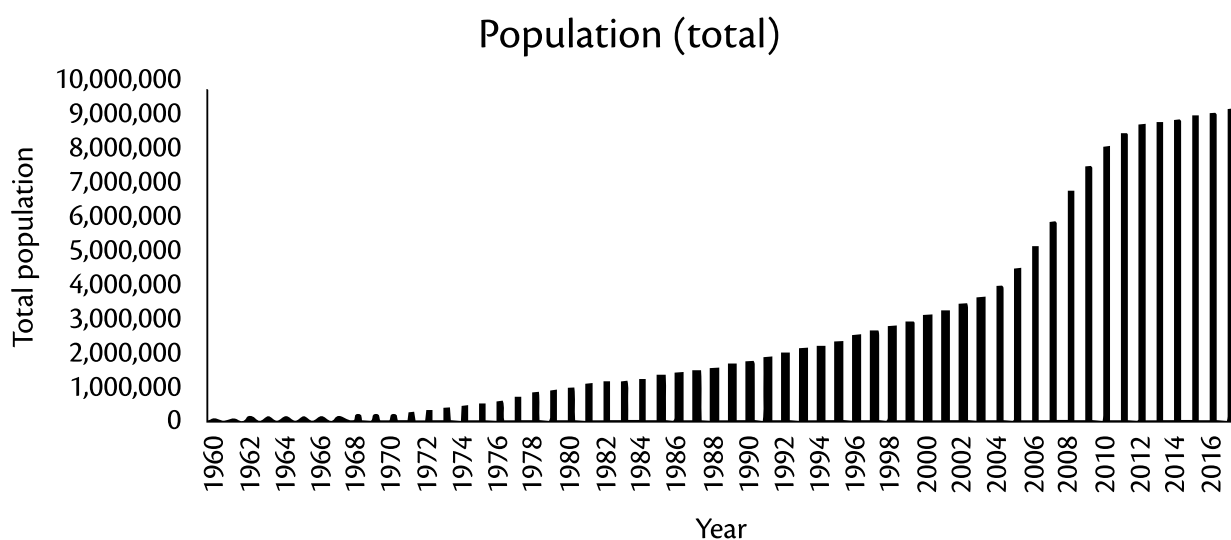


Figure 1. Total population of the UAE, 1960 to 2017. (Source: World Bank. 2018. World Development Indicators, UAE)

In general, the UAE has a hyper-arid climate with high temperatures throughout the year and little rainfall (Böer, 1997). Monthly mean minimum temperatures range from 1°C (January) to 20.2°C (July), with a minimum of -5.7°C (February), whilst monthly mean maximum temperatures range from 32.1°C to 50.3°C, with a maximum of 51.8°C (Source: UAE National Center of Meteorology via [Federal Competitiveness and Statistics Authority](#)). Snow is a rare occurrence in the mountains. However, there is also some climatic variation, with more precipitation and lower temperatures in the northeast of the country, and higher temperatures with less precipitation in the deserts of the southern and western UAE (Böer 1997). Annual precipitation averages less than 120 mm in the lowlands but may reach 350 mm in the Hajar Mountains. There is wide monthly and annual variation in rainfall (Figure 2). The UAE may be seen as a harsh environment for species, although cultivation and development of residential areas has helped create seeming oases within the landscape. There is a considerable amount of variation in the country's habitats, from coastal regions to mountains at high elevations and low-lying desert plains, in addition to cultivated areas and residential developments. The effects of climate change on the climate of the UAE are currently

unclear: There is potential for increase in rainfall, with wetter and cooler conditions, in addition to the possibility of soaring temperatures and increased aridity.

The Hajar Mountains run north-south along the east of the UAE and into Oman, with the highest areas rising to almost 2,000 m above sea level, close to the border between the countries (Feulner 2011). They are composed of steep rocky peaks, slopes, and deeply incised wadis. Towards the north of this range (and into Oman) is the Ru'us al-Jibal mountain range that is arid and geologically distinct with basic igneous rocks, known as ophiolites, and a unique soil composition (ultrabasic bedrock and unusual soil chemistry), which allows unusual, characteristic flora to grow here (Feulner, 2011). Jebel Hafeet, an outlier of the Hajar mountain range, is found near the city of Al Ain and the border of Oman, and presents a unique elevated, rocky habitat within an area that is otherwise characterised by lowland plains and cities (EAD, 2018). Wadi habitats occur throughout the northern section of the UAE. These are rocky areas formed by historical erosion of the land due to rivers. Now that the rivers have dried up, these canyons and crevices remain, providing opportunities for colonisation by suitable plant species.

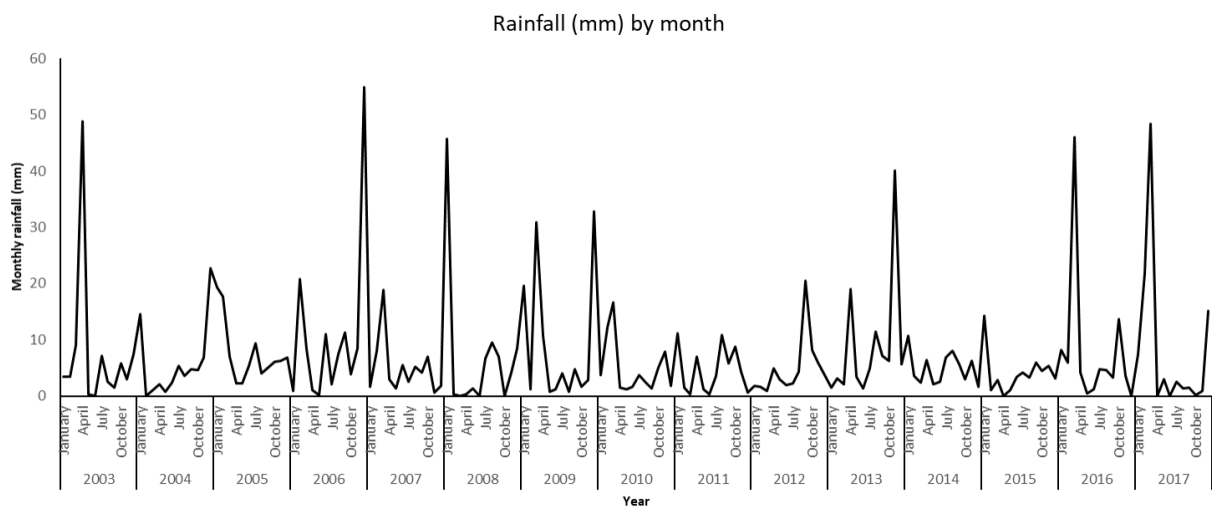


Figure 2. Monthly rainfall (mm), 2003 to 2017. Source: Open Data Portal of the UAE Government (UAE, 2019)

Coastal habitats within the UAE include beaches, expanses of sand dunes, mudflats, fields of seagrass and mangroves, offshore islands, and coral reefs (EAD 2008). These areas were important throughout the history of the country in terms of fishing and trade (EAD 2018). More recently, the coast is increasingly becoming the focal point of the UAE’s tourism industry, with cities and residential areas along the coast expanding to accommodate tourists as well as an increasing population size. The rest of the country consists primarily of low-lying desert habitats, including extensive sand sheets and dunes, alluvial and interdunal gravel plains, and coastal and inland sabkhas (salt flats). Although these are considered inhospitable, xerophytic plants thrive here, and occasional trees provide shade for animals. Plants in the desert are also likely to be grazed by camels, meaning that adaptations against this threat are beneficial to species survival. In the southeast, an extensive area of sand dunes forms the northern edge of the Rub al Khali (Empty Quarter). There are large oasis complexes at Buraimi–Al Ain on the UAE–Oman border, and a ‘crescent’ of cultivation occurs in Liwa in the south. Anthropogenic habitats consist of irrigated farms, forest plantations, and urban areas.

Currently, the country is experiencing rapid growth in population size due to the influx of employees. The total population has seen a threefold increase since the year 2000, with a current estimate of over 9,500,000 (World Bank 2018).

As tourism in the UAE flourishes, so does the development of residential areas and coastal regions; commercial, industrial, tourism, and residential development has expanded greatly in the country during the past 30 years. This poses a considerable threat to flora along both the Arabian Gulf coast and east coast of the UAE. Conversely, species growing in the Hajar Mountains and Ru’us al-Jibal may well face fewer threats due to the inaccessibility of these areas and the difficulty of developing them. Introduced species have also had an impact on the local flora through competition for resources. Species brought into the country through cultivation may be particularly well-adapted to agricultural and residential areas, essentially outcompeting the few native freshwater and city-adapted species. These introductions are the result of a long history of trade in the UAE with roots in imports of traditional medicine, in addition to cultivation of crops for the ever-expanding population. As some introductions occurred many years ago, it can be difficult to identify which species are truly native to the country.

The UAE has a well-developed network of protected areas (PAs), with 49 protected areas recognised by the federal government (Figure 3), as well as numerous emirate-level protected areas (not yet designated by the federal government) and private reserves.

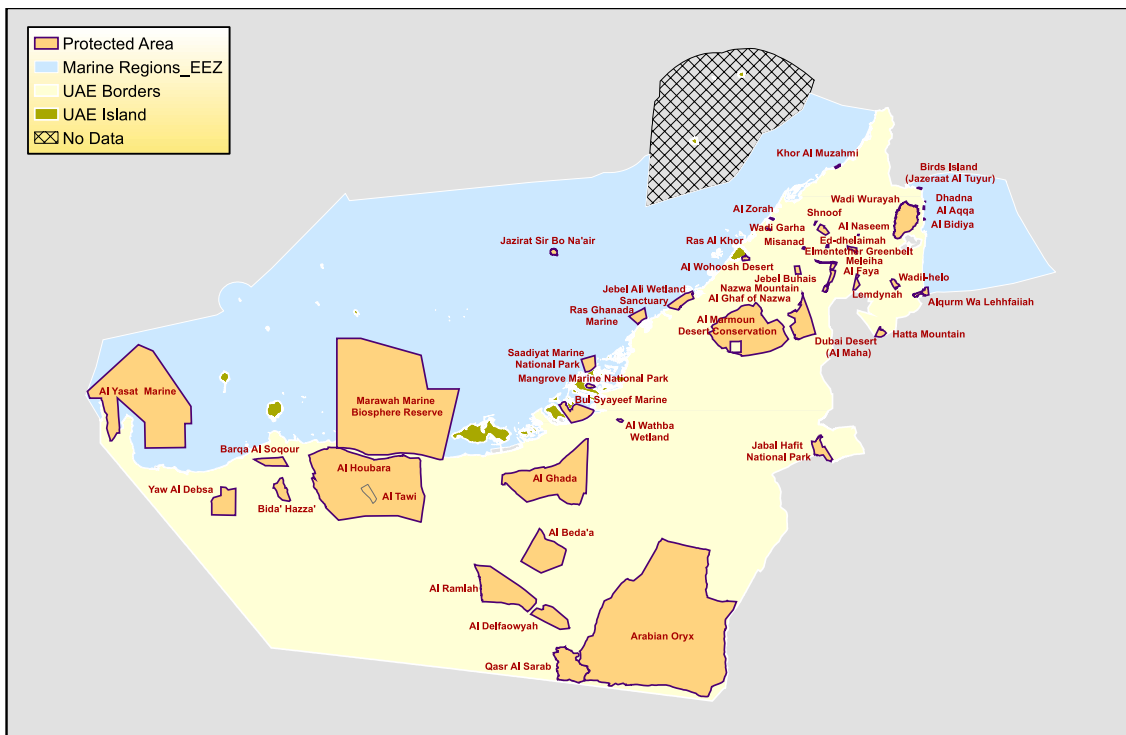


Figure 3. Protected areas within the UAE. Sources: MOCCA and WDPA (2020).

1.2 Terrestrial plants

The majority of native plants in the UAE are terrestrial, adapted to the harsh, arid conditions of the country. In accordance with this, small shrubs, succulents, and herbs are more common in the wild than large trees. Many flora species are xerophytes, which assists them in surviving throughout dry periods. In addition, halophytic species occur near the coast, as they tolerate the high salinity of the soil; therefore, it is not unusual to find monotypic stands of plants here. Annual species also grow in the UAE, as this lifestyle makes the most of favourable conditions throughout the year. Unfortunately, it can also be difficult to gain detailed information on these species, as they are only visible for a short period of the year. As a result, many annual species within the country are classified as Data Deficient due to lack of available published data.

The UAE is a meeting point of the Afrotropical and Palearctic realms, with numerous Afrotropical species (e.g., *Herniaria maskatensis* Bornm.) reaching their northern limit in the country at Al Ain, at the northern end of Jebel Hafeet. Similarly, some Palearctic species that are widespread in the plains and at low elevations in Central mangrove within Abu Dhabi provide support for thousands of water birds during the migratory season (Aspinall 1995, Scott 1995), while the roots of the trees create sheltered 'nursery' areas for juvenile individuals of a range of marine species.

Three species of seagrass occur in the coastal waters surrounding the UAE: *Halodule uninervis*, *Halophila ovalis*, and *Halophila stipulacea*. While *H. uninervis* can occur in a range of substrates, *H. ovalis* and *H. stipulacea* are more specialist, occurring only in sand, coral, or mud-sand habitats (EAD 2008). Seagrass species are crucial in

supporting charismatic marine fauna. For instance, the country plays host to a portion of the largest population of limit in the country at Al Ain, at the northern end of Jebel Hafeet. Similarly, some Palearctic species that are widespread in the plains and at low elevations in Central Asia and other parts of West Asia reach their southern extent in the UAE at higher elevations in the Ru'us al-Jibal. Not including species clearly imported for landscape or horticulture purposes, the UAE has more than 945 recorded species of terrestrial plants, of which 598 are here considered to be taxonomically valid (for example, not asynonym of another species) and native to the country. The most diverse family within the UAE is Poaceae (Order POALES).

1.3 Marine and freshwater plants

The most charismatic of the marine plants in the UAE is the Grey Mangrove (*Avicennia marina*). This species has been subject to conservation programmes in recent years in an attempt to restore mangrove stands, which support some of the largest subpopulations of Dugongs (*Dugong dugon*) outside of Australia (EAD 2008). Dugongs are globally assessed as Vulnerable (Marsh and Sobotzick 2019).

Freshwater plants in the UAE are often the result of historic introductions for cultivation, as their habitats are not historically frequent within the country, but have increased due to dam and water breaker development, agricultural and landscape/amenity irrigation, and other artificial wetland habitat creation. In this Red List, there are just seven strictly freshwater plants recorded as native to the country.

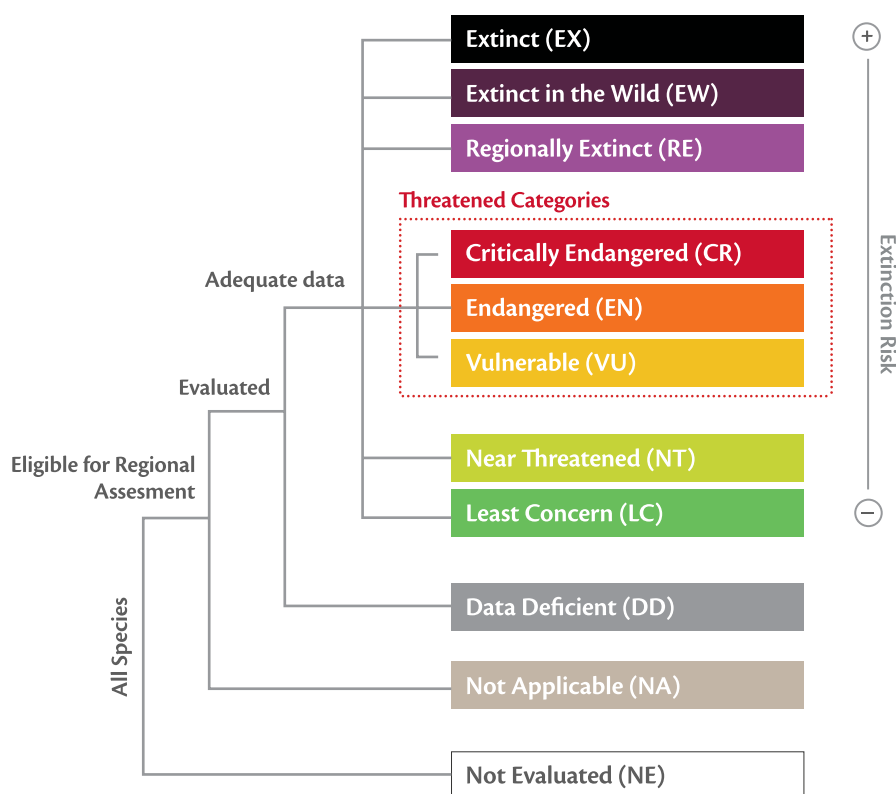


Figure 4. The IUCN Red List Categories at the regional scale, which includes two additional categories to the global Categories: Regionally Extinct (the species no longer occurs in the wild in the UAE) and Not Applicable (the species is not considered to be native to the UAE).

1.4 Assessment of species extinction risk

The extinction risk of plants, animals, and fungi is one of the most widely used indicators for assessing the condition of ecosystems and their biodiversity. Extinction risk assessments are intended to be policy-relevant, and can be used to inform conservation planning and priority setting processes. However, they are not intended to be policy-prescriptive and are not in themselves a system for setting biodiversity conservation priorities.

The IUCN Red List Categories and Criteria (IUCN 2012a) are designed to determine the relative risk of extinction of a taxon with the main purpose of cataloguing and highlighting those taxa that are facing an elevated risk of extinction. The IUCN Red List provides information on taxonomy, distribution, ecology, threats, and conservation status of taxa that have been evaluated using the IUCN Red List Categories and Criteria.

The IUCN Red List Categories are based on a set of quantitative criteria that are linked to population trends,

size, and structure, and the geographic extent and distribution of species, as well as the threats they or their habitats face. There are nine categories, with species classified as Vulnerable (VU), Endangered (EN), or Critically Endangered (CR) collectively considered as threatened. When conducting regional or national assessments, as in this UAE National Red List, the IUCN Red List Regional Guidelines (IUCN 2012b) are applied, and two additional categories are used: Regionally Extinct (RE) and Not Applicable (NA) (Figure 4). The Regionally Extinct category is used in the context of the scope of the assessment project, and so throughout this report, RE refers to a species that is extinct within the UAE but persists elsewhere in the wild across its global distribution. As the extinction risk of a species can be assessed at global, regional (for example, the Arabian Peninsula), or national levels, a taxon may have a different category in the global Red List than in the sub-global Red List. For example, a species that is common worldwide and classed as Least Concern (LC) in the global Red List could face a high level of threat in the UAE and therefore be listed as threatened in the UAE

National Red List. Logically, if any species were endemic to the country, it should have the same category at the national and global levels, as it is not present anywhere else in the world.

1.5 Red List Index

The Red List Index (RLI) was developed to use the IUCN Red List methodology to measure the rate of biological diversity loss (Butchart et al. 2004, 2005, 2007), and is a component in both the Convention on Biological Diversity (CBD) and Sustainable Development Goals (SDGs)

indicator sets. The RLI is based on the number of species in each Red List Category. Trends in the RLI are based on the species that experience genuine improvement or deterioration in status. The RLI can be calculated for any set of species that has been assessed at least twice. To date, global RLIs have been published for birds (1988–2016), mammals (1996–2008), amphibians (1980–2004), reef-forming warm-water corals (1998–2008), and cycads (2003–2014) (see the Red List Index page on The IUCN Red List of Threatened Species™: <https://www.iucnredlist.org/assessment/red-list-index>).

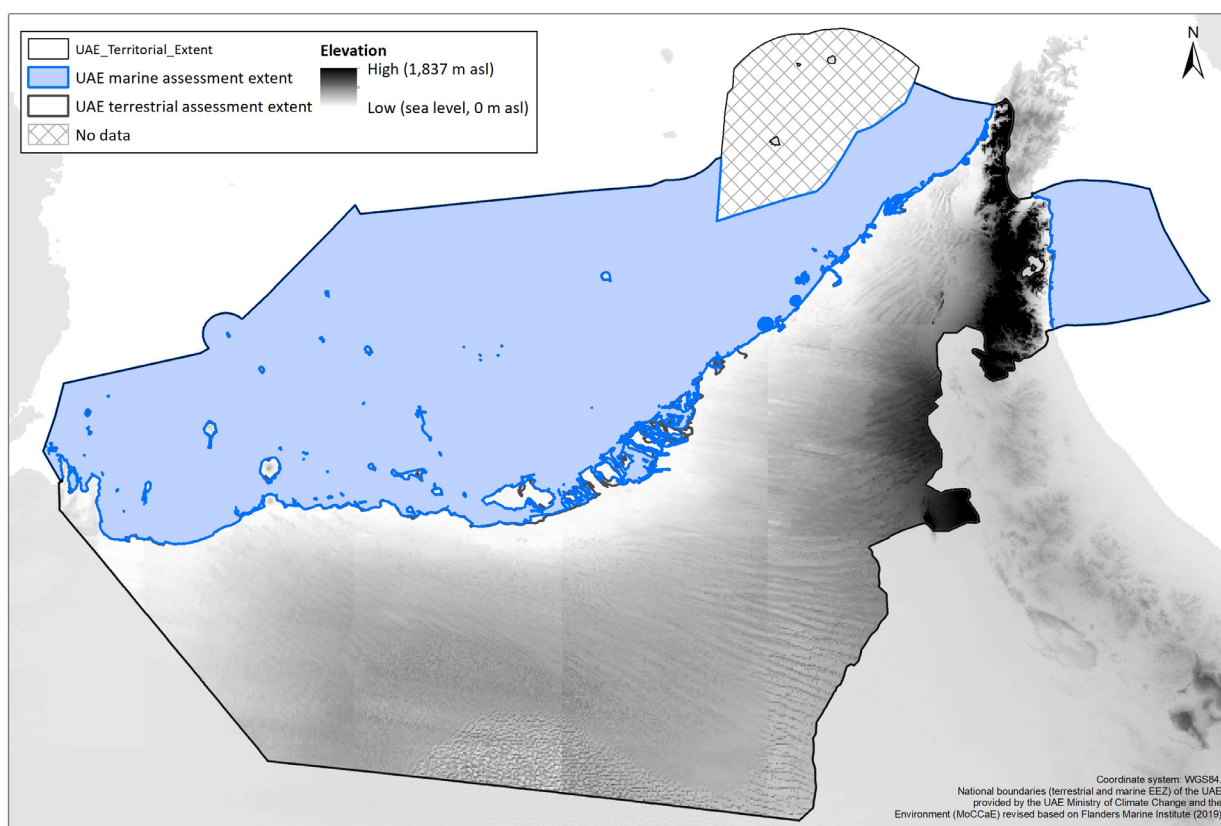


Figure 5. The geographic scope of the UAE National Red List assessment, showing the national terrestrial and marine (exclusive economic zone) extents. Source: MOCCA and Flanders Marine Institute (2014).

1.6 Objectives of the UAE National Red List of Vascular Plants

The UAE National Red List of Vascular Plants has five main objectives:

- to contribute to national conservation planning through the provision of a baseline dataset reporting the conservation status of native plant species;
- to identify priority geographic areas and habitats that need to be conserved to prevent extinctions and to ensure that UAE plant species reach and maintain a favourable conservation status;
- to determine major current and future threats, and to propose potential mitigating measures and conservation actions to address them;
- to bring together and strengthen the network of experts focused on plant conservation in the UAE so that research can be undertaken to rectify the lack of information that results in Data Deficient species, and expertise can be targeted to address the highest conservation priorities;
- to produce a Red List Index datapoint for the UAE flora.

The data presented in this report provide a snapshot based on the knowledge of the UAE national assessments available at the time of production.

Assessment methodology

2.1 Geographic scope

The geographic scope of the UAE National Red List comprises the terrestrial and marine (as defined by the exclusive economic zone – EEZ) extents of the country (Figure 5). GIS spatial layers provided by the Ministry of Climate Change and Environment (MOCCA) were used to restrict the individual species distribution maps to the UAE and to undertake spatial analyses.

2.2 Taxonomic scope

The UAE National Red List of Vascular Plants has assessed the status of vascular plants considered to be native to the UAE. All taxa are assessed at the species level, although the particular taxon present in the country may be present at the intraspecies level (variety, subspecies, or form).

An initial list of species recorded in the UAE was compiled by IUCN based on an annotated list prepared by the Sharjah Seed Bank & Herbarium (SSBH) and made available by D. Aplin. This SSBH list drew from two primary published resources (Jongbloed et al. 2003, Karim and Fawzi 2007), with additional species added following review of more recent published records, especially the draft Red Data Book for the flora of the UAE (MOCCA, 2010), the checklists for the Ru'us al-Jibal (Feulner 2011) and the Wadi Wurayah National Park (Feulner 2016), a provisional checklist for the Arabian Peninsula being compiled by the Centre for Middle Eastern Plants (contains c. 347 species for the UAE; A. Forrest pers. comm. 2018; Royal Botanic Garden Edinburgh), and comments made and edits proposed by a number of expert botanists, including A. Forrest, G.R. Feulner, G. Brown, S.A. Ghazanfar, B. Böer, M. Jongbloed, various staff of the Royal Botanic Garden (RBG) Edinburgh and RBG Kew, and many others.

This first draft list was then revised through a two-stage process to (i) update nomenclature and taxonomy, and (ii) remove non-native species, which were excluded from the assessment. Nomenclature and taxonomy revisions were based on the review of two of the primary taxonomic reference sources used for plants by the IUCN Red List, the African Plant Database (APD 2020) and the Plants of the World Online portal (Board of Trustees, RBG Kew 2020), as well as the International Plant Name Index (IPNI 2019), published taxonomic reviews of particular species, genera, and families, and inputs from various experts from RBG Edinburgh, RBG Kew, and elsewhere.

To prioritise species, any plants that were historically introduced to the UAE (archeophytes), even if they had now become naturalised, were considered as Not Applicable (NA) for this Red List. All non-native crop,

landscape, and many weedy species were removed from the assessment as a result. IUCN with MOCCAIE defined native in this case as follows: *A native species is one likely to have occurred in the territory 5,000 to 6,000 years ago (Before Present). This roughly equates to the end of the Holocene Climate Optimum, after which the development of trade and agricultural systems resulted in the movement of species.* This definition excludes both recently introduced species, such as cultivated and landscape plants, and species that have been introduced historically through trade, medicinal or food cultivation, and accidental movement. A number of online resources were used to inform decisions of origin, including the *Plants of the World Online portal* (Board of Trustees, RBG Kew, 2020), *Invasive Species Compendium* (CABI, 2019), *Delivering Alien Invasive Species Inventories for Europe* (DAISIE, 2019), and *Germplasm Resources Information Network* (GRIN, 2019). In addition, MOCCAIE (O. Al Shamsi pers. comm. 2018) provided a list of cultivated and landscape plants present in the UAE. This list contained c. 3,627 scientific names and 3,859 common names (with some common names either not being assigned to a scientific name or being assigned to more than one species), indicating the scale of introduction. Forty-seven species are considered introduced or cultivated by MOCCAIE but included in this National Red List as native or probably native. Decisions were also informed by the outcomes of a native plant working group (Sharjah Research Academy, 15 May 2019) that reviewed the origin of plant species in the UAE, the *Invasive Alien Species Validation and Prioritization in the United Arab Emirates* report (Pagad et al., 2017), and interventions by several individuals. To some degree, especially for archeophytic introductions, this was a subjective exercise, and one where certainty for many species was difficult to establish. In these instances, a decision was made on the balance of probability if a species is native or not, and further research is likely to change the status of numerous species. Finally, a number of species changed origin status during the assessment workshop.

2.3 Assessment protocol

For all assessments, the following data were compiled by IUCN staff using IUCN's online database, the Species Information Service (SIS):

- Taxonomic classification and UAE-specific Taxonomic Notes.
- Geographic range within the UAE and, briefly, the global distribution of the species.
- Population information and overall population trend.
- Habitat preferences and primary ecological requirements, including pertinent biological information (e.g., generation length, maximum size and age), where available.
- Species use and trade.
- Major threats.
- Conservation measures (in place and needed).
- Other general information.
- National Red List Categories and Criteria and rationale.
- Key literature references.

A range of resources (cited as sources within individual assessments) were used, but great reliance was placed on Jongbloed et al. (2003), which still represents the sole published comprehensive resource of species information and detailed distribution maps for the UAE.

Finalisation of assessments and distribution maps (see section 2.4 Species mapping below) followed a three-stage process. First, the draft assessments and maps were submitted to MOCCAIE, who circulated them to national experts, and returned edits and comments to IUCN. The main review occurred through the National Red List Assessment Workshop, held in Dubai on 15–19 September 2019. The workshop was hosted by MOCCAIE and facilitated by IUCN staff. A large number of experts contributed their time and expertise during the workshop to review both the assessment maps and the draft assessments, and to assign a final Red List category. Sixty-three Data Deficient species assessments were not reviewed at the workshop due to time constraints, and many of these were reviewed by Gary Feulner following the workshop.

Post-workshop editing was undertaken by IUCN staff, and a final stage of review and commenting followed, with the drafts again circulated by MOCCAIE to national experts, and resulting comments and data incorporated

by IUCN. Consistency in the use of IUCN Criteria was checked by IUCN staff. The finalised IUCN Red List assessments are a product of scientific consensus concerning species status, and are supported by relevant literature and data sources.

2.4 Species distribution mapping

Draft digital distribution maps were created in ArcGIS based on the maps presented in Jongbloed et al. (2003) where available, published literature, point data records from SSBH and D. Aplin (georeferenced photographic records) – both primarily for the emirate of Sharjah, M. Tsaliki (Ras Al Khaimah), and ad hoc data from RBG Kew and individual correspondents. The draft maps were clipped to the national boundary provided by MOCCA. Draft maps first underwent review and editing during the Dubai assessment workshop, and then a final stage of review after the workshop before finalisation (clipping to the altitude range for each species which was cited in the Red List assessment, and polygon smoothing) by IUCN.

Metadata coding was used to distinguish presence, origin, and seasonality across the spatial extent of a species' distribution in the UAE. These codes differentiate the species' presence (species are recorded as Extant, Possibly Extant, or Extinct), seasonal presence in the location (the default setting of Resident was assigned), and origin (Native, Introduced, Reintroduced, or Uncertain). The coding information can be found in the Red List digital distribution metadata guidance (IUCN, 2018). Review and finalisation then followed the approach taken for the terrestrial herpetofauna maps.

In the analysis of the spatial data to produce the species richness maps, only distributions with the following Presence, Seasonality, and Origin codes were used:

- Presence: Extant and Possibly Extant
- Origin: Native and Reintroduced
- Seasonality: All (only Resident and Seasonal Occurrence Uncertain codes present)

Spatial data were analysed using a geodesic discrete global grid system, defined on an icosahedron and projected to the sphere using the inverse Icosahedral Snyder Equal Area (ISEA) projection, cell resolution 10. This corresponds

to a hexagonal grid composed of individual units (cells) that retain their shape and area (865 km²) throughout the globe. These are more suitable for a range of ecological applications than the most commonly used rectangular grids. The range of each species was converted to a hexagonal grid for analysis purposes, and cells were clipped to the boundary of UAE territory using a UAE terrestrial boundary provided by MOCCA and a marine extent (EEZ) from Flanders. The pattern of overall species richness was mapped by counting the number of species in each cell (or cell section). Patterns of threatened species richness were mapped by counting the number of threatened species (categories CR, EN, VU at the UAE national level) in each cell or cell section.

2.5 Red List Index datapoint

To produce the Red List Index (RLI) for plants in the UAE, the 598 plant assessments conducted and reviewed as part of the UAE National Red List process were used. These included native species resident to the country, but excluded introduced (NA) species. Species that only just occur in the UAE or have only been reported very occasionally were also included; these are sometimes termed marginal species (IUCN 2012b).

When producing the RLI, the categories included were: Critically Endangered (Regionally Possibly Extinct) (CR(RPE)), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), and Least Concern (LC). The process followed the methods of Butchart et al. (2007), and adopted recent practice (e.g., Butchart 2008, Butchart et al. 2010, Hoffmann et al. 2010, 2011) in using equal-steps weights for each Red List Category – i.e., 0 for LC, 1 for NT, 2 for VU, 3 for EN, 4 for CR, and 5 for CR species tagged as Possibly Extinct sensu IUCN Standards and Petitions Subcommittee (IUCN 2017) – to calculate an RLI value. Data Deficient species were excluded, as it is not possible to assign a weighted value to them. Following the removal of these species, there were 433 species assessments to use to produce the RLI for the plants of the UAE.

The number of taxa in each IUCN Red List Category was multiplied by these weights, and the sum expressed as a fraction of the maximum possible sum (equating to all

taxa having gone extinct, i.e., the number of species multiplied by the maximum weight of 5) and subtracted from one. The calculation produces an index value that ranges from 0 to 1. The lower the value, the faster the set of species is heading toward extinction. If the value is 1, all species in the set are Least Concern, and if the value is 0, all species are Extinct in the UAE. The RLIs were calculated following Bubb et al. (2009).

At the National Red List Assessment Workshop, the Red List categories and criteria were also backcast to 1996 based on available information and the expert knowledge of participants. Conservatively, it was assumed that the Red List category would have been the same in 1996 as in 2019, unless there was available information to show that a genuine change in Red List status may have taken place in the intervening years.

The same procedure as outlined above was conducted on these backcast categories to produce an RLI value for 1996, allowing for comparison in the overall status of plants in the country between 1996 and 2019.

3. Results

A total of 598 species of vascular plants are here considered to be taxonomically valid (i.e., an accepted published name and not a synonym of another taxon) and native to the UAE. However, it should be noted that this includes a number of species, in most cases considered Data Deficient, whose taxonomic identity with respect to other species, or whose presence or origin within the country requires confirmation. In a few cases, these DD species are potentially synonyms of other assessed species, but are included here separately since their identity requires confirmation. The list of included species, their taxonomic status, and their Red List category is shown in Appendix 2 at the end of this report.

A small number of species may occur within the UAE but were excluded from this Red List because there are no confirmed records at present. These include *Teucrium oliverianum*, *Althaea ludwigii*, *Leontice leontopetalum*, and *Thymelaea mesopotamica*, examples of species that have been recorded from higher elevations in the Ru’us al-Jibal

(Feulner 2011), but whose records there are from the Oman side of the border with no record from the UAE. Further surveys may confirm such species for the UAE.

The vast majority (589) of the included species are fully terrestrial (or terrestrial but associated with moisture or surface water). Only seven species, all assessed as Data Deficient, are aquatic. Their origin in the country is in most cases uncertain; some, such as *Potamogeton lucens* and *Ruppia maritima*, are known from a single record or locality.

Only the three seagrasses present in UAE waters – *Halophila ovalis* (Dugong Grass, NT), *Halophila stipulacea* (NT), and *Halodule uninervis* (LC) – are fully marine. Three species (*Arthrocaulon macrostachyum*, *Suaeda vermiculata*, and *Avicennia marina*) are associated with marine, terrestrial, and freshwater realms. Of the mangroves, only *Avicennia marina* (Grey Mangrove) is considered to be native to the country. *Rhizophora mucronata* (True Mangrove) is considered Not Applicable for the UAE National Red List, as there is no clear evidence of historical natural occurrence in the UAE, despite recent attempts to reintroduce the species.

No vascular plant species or infrataxa is endemic to the country, however, there are several near-endemic species, restricted to the Hajar Mountains of Oman and the eastern UAE.

System	Species
Terrestrial	569
Terrestrial; Freshwater (=Inland waters)	16
Freshwater (=Inland waters)	7
Marine	3
Marine; Terrestrial; Freshwater (=Inland waters)	3

Table 1. Terrestrial, marine and freshwater associations of UAE plants.

3.1 Threat status

Of the 598 plant species considered native to the UAE, eight (1.3%) were assessed as Critically Endangered (CR), with one of these, *Gymnarrhena micrantha*, considered possibly extinct (CR(PE)). Eighteen species (3%) are Endangered, 12 species (2%) are Vulnerable, and 20 species (3.3%) are Near Threatened. A total of 375 species (62.3%) are Least Concern. Significantly, more than one-quarter of the species (165, 28.1%) are Data Deficient.

Red List Category	Number per Red List Category
Extinct (EX)	–
Extinct in the Wild (EW)	–
Regionally Extinct (RE)	–
Critically Endangered (CR)	8
Endangered (EN)	18
Vulnerable (VU)	12
Near Threatened (NT)	20
Least Concern (LC)	375
Data Deficient (DD)	165
Total number of species assessed	598

Table 2. The extinction risk of plants assessed for the UAE National Red List.

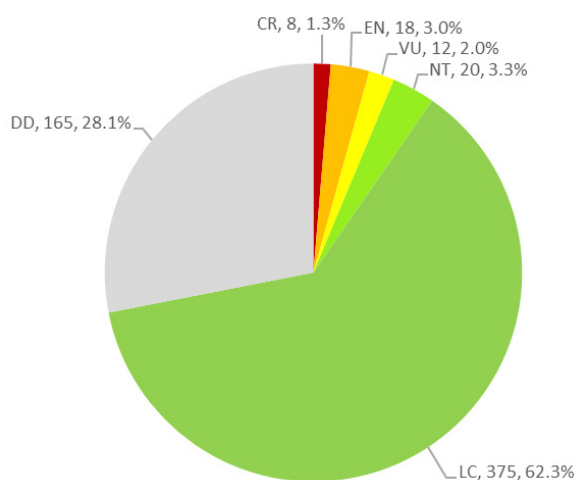


Figure 6. The IUCN Red List status of vascular plants in the UAE, showing the number and proportion of species in each category.

The proportion of threatened (CR, EN, VU) species is uncertain given the high number of Data Deficient (DD) species, and could lie between 6.4% (if no DD species are threatened) and 34% (if all DD species are threatened) (Table 3; IUCN, 2016). The mid-point figure provides the best estimation of the proportion of threatened species (IUCN, 2016), and for the UAE, 8.8% is the proportion of species that are considered to be threatened. The threat status of the vascular plants is summarised in Table 1 and Figure 6, and discussed in detail below. This range in the possible level of threat emphasises the significant need for botanical research in the country in order to be able to understand the status of the DD species.

System	Species
Lower bound (CR+EN+VU) / (assessed – EX)	6.4%
Mid-point (CR+EN+VU) / (assessed – EX – DD)	8.8%
Upper bound (CR+EN+VU+DD) / (assessed – EX)	34%

Table 3. Proportion of threatened plants (terrestrial, marine and freshwater) in the UAE.

Just 71 of the species that have been assessed for the UAE National Red List have global assessments on The IUCN Red List of Threatened Species. All are Least Concern at the global scale.

3.2 Spatial distribution of plants

Only approximately three-quarters (471) of assessed species are thought to have their distributions in the UAE fully mapped based on the current state of knowledge. The distribution maps of a further 67 species are considered incomplete, whilst for 60 (10%) species, all Data Deficient, it was not possible to produce a distribution map; the reasons for this include uncertainty over the taxonomic identity of species records and uncertainty over whether a taxon occurs within the country's territory.

As expected from the geography and geology of the UAE, and the rainfall patterns across the country, the greatest

species richness is found in the higher-altitude areas – the Hajar Mountains, the Ru’us al-Jibal, and Jebel Hafeet (Figure 7). Many of the DD species without a distribution map and species with incomplete maps occur within the Ru’us al-Jibal. The mountain areas, especially the Ru’us al-Jibal and the higher parts of the Hajar Mountains, are often hard to access, and survey effort here is likely to be lower; for these reasons, it is likely that the mountain species richness shown in Figure 7 under-represents the actual richness in these areas. The arid desert to the south

of the UAE has lower species richness than the remainder of the country (Figure 7).

The occurrence and distributions of plants on the islands of the Arabian Gulf are not well known, at least in the published literature. Sakkir et al. (2017) looked at occurrence on the islands, but do not list species for individual islands, and the distribution maps compiled here are likely to under-represent species richness on the islands.

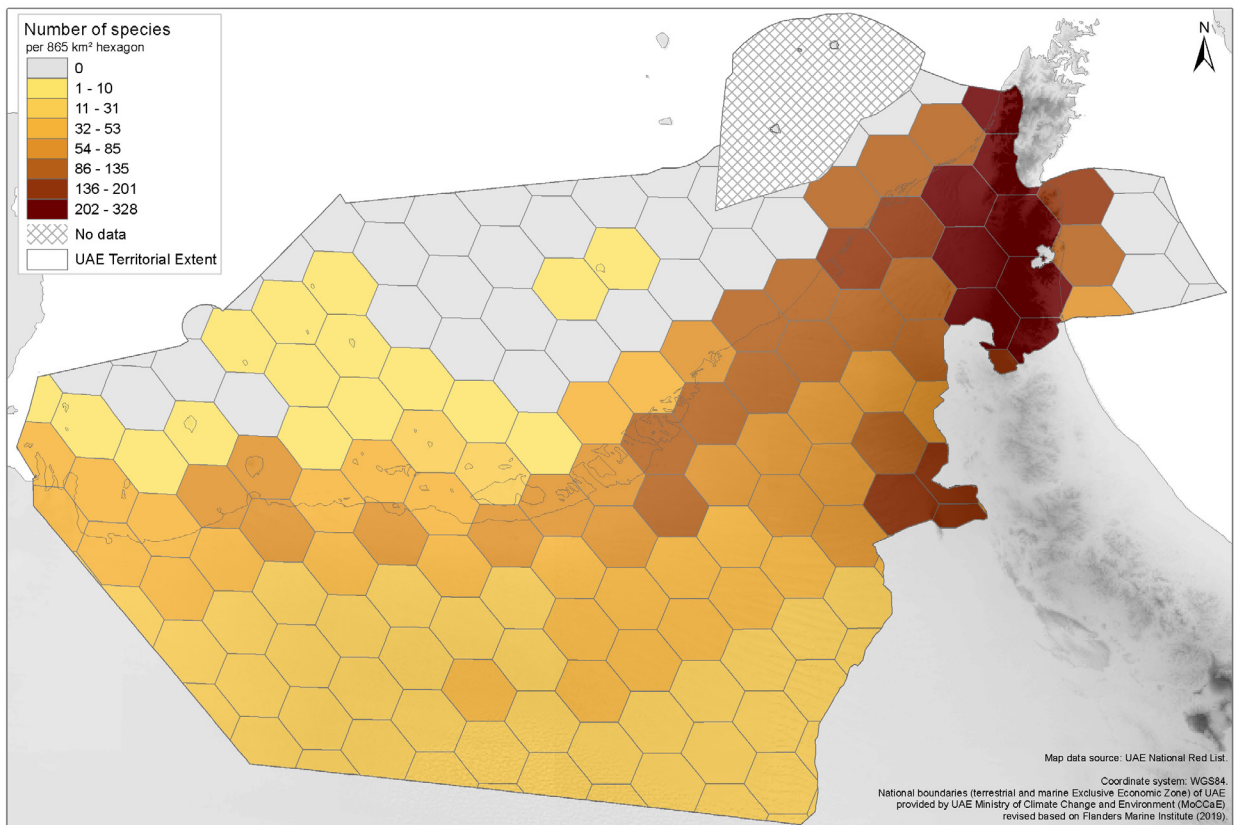


Figure 7. Overall species richness of vascular plants in the UAE.

The greatest richness of threatened species occurs across coastal areas and mountainous areas (Figure 8). This reflects the high level of historical and ongoing development within the UAE, particularly in the coastal areas, but also that the species at higher elevations tend to have very much more restricted distributions, confined by geology, elevation, localised climatic patterns, and plant biogeography. Feulner (2011) notes that many of the species found in the Ru’us al-Jibal have the main parts of their distributions in more temperate areas,

particularly Iran and adjacent parts of Central Asia, and therefore occur in the UAE at the edge of their range, restricted to higher, often moister and cooler, elevations.

Threatened species are also found through coastal areas and on the islands of the Arabian Gulf. For example, *Mesembryanthemum nodiflorum* (VU) mainly occurs in sandy coastal areas within the country, including the islands, and its habitat has been fragmented by rapid residential and tourism development.

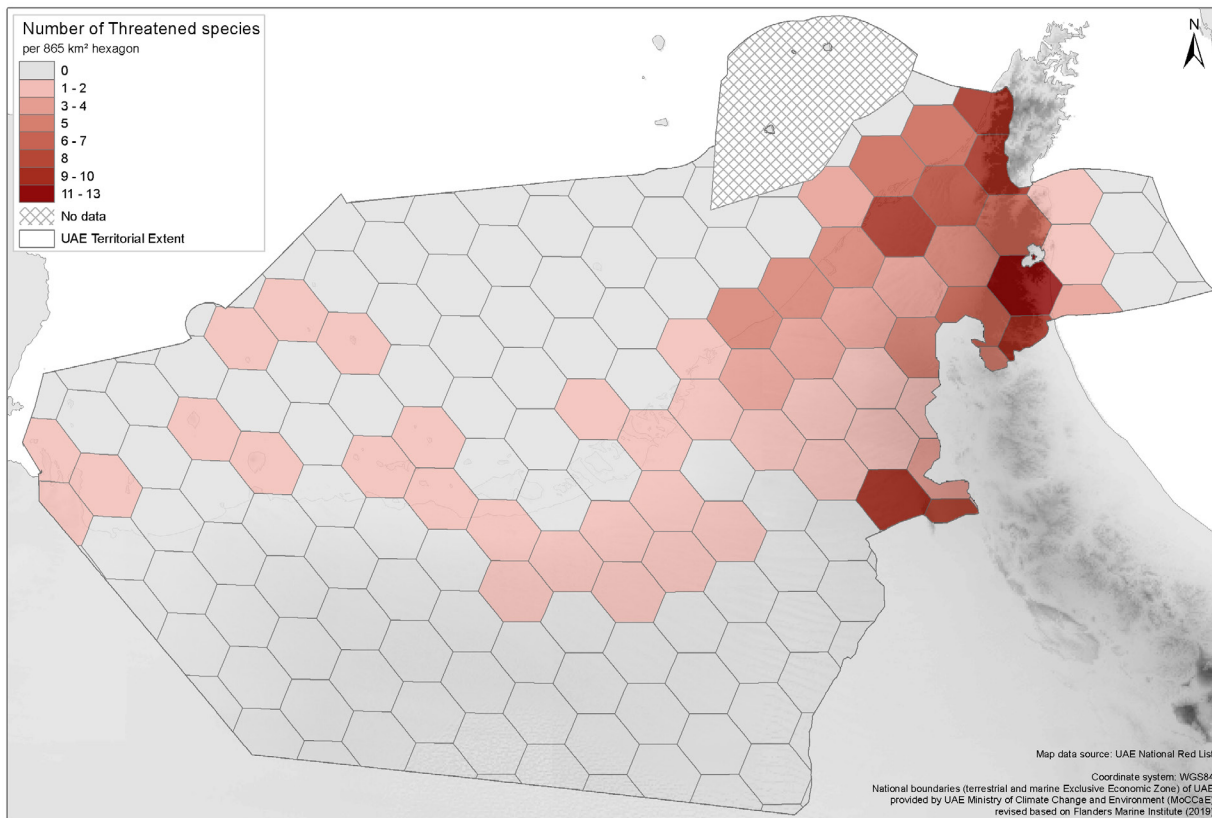


Figure 8. Threatened species richness of vascular plants in the UAE.

Many of the Data Deficient species occur in mountain habitats, and the associated gravel plains and rocky areas (Figure 9). This is likely due to the difficulty of conducting research there and the relative absence of roads. However,

these areas (encompassing the Hajar Mountains, the Ru’us al-Jibal, and Jebel Hafeet) also have the greatest species richness within the UAE (Figure 7) .

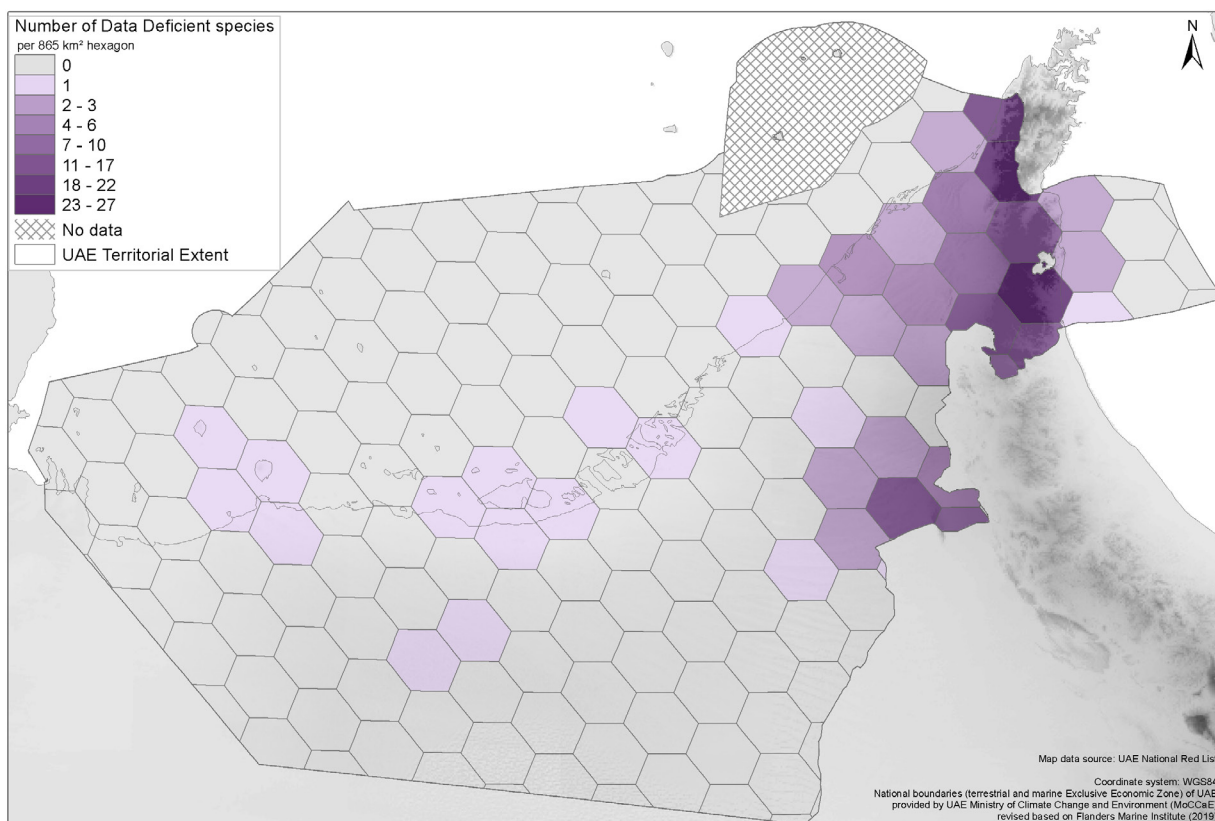


Figure 9. Data Deficient species richness of vascular plants in the UAE.

3.3 Major threats to vascular plants in the UAE

Where information is available, the threats for each species were coded in the SIS database using the IUCN Threats Classification Scheme. Based on current information, just 33 species were thought to have no past, ongoing, or future threats; however, for more than half (318) of the species, no information on the presence or absence of threats is available. A summary of the relative importance of the different threatening processes for which data existed is shown in Figure 10.

Agriculture is listed as the primary threat for most species (168) where information exists – primarily grazing and habitat degradation from livestock farming and ranching, with, to a much lesser extent, crop agriculture and plantations. Residential and commercial development is considered the next most significant threat to plants in the UAE, affecting 107 species. Other major threats

include quarrying and road construction, recreational activities, water abstraction and management, fire, and grazing by problematic native and introduced species, e.g., feral goat (*Capra hircus*) and donkey (*Equus asinus*).

Climate change and severe weather is the third most cited threat to plants, with temperature extremes, storms and flooding, habitat shifting and alteration, and droughts all considered threats to species. The impact of global climate change in the region is not well understood, although some predictions are of wetter but hotter conditions (AGEDI 2015). Species with restricted distributions, or those that exist at the edge of their global range or within specific habitats, such as at elevation or close to water, are expected to be more vulnerable to changing climate (Fitzpatrick et al. 2015). However, further research to understand species distribution and vulnerabilities, as well as more detailed climate models are required in order to comprehend likely impacts of climate change.

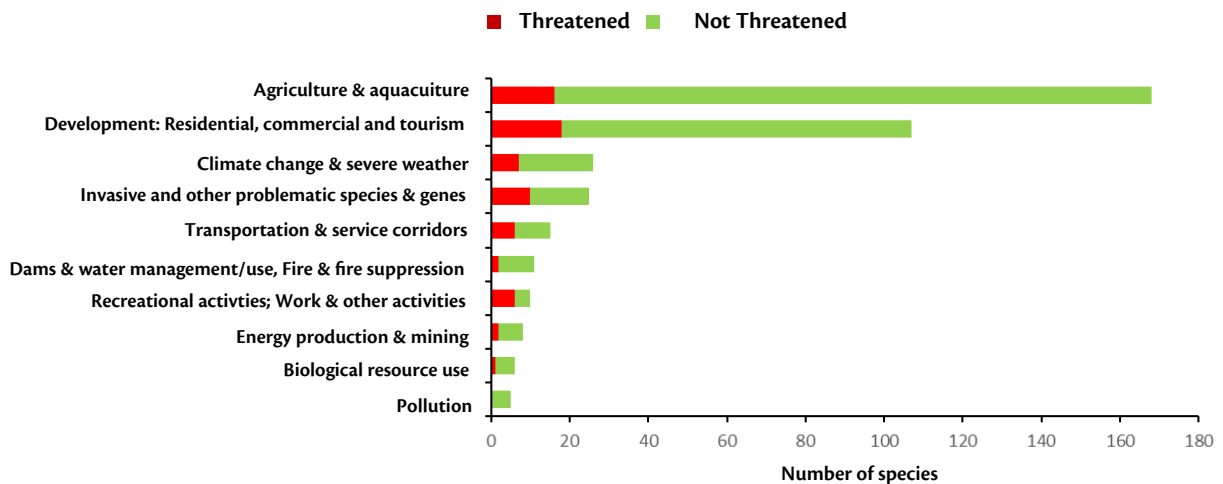


Figure 10. Identified threats to vascular plants in the UAE.

3.4 Population trends

For the majority of plant species in the UAE, the population trend is unknown. Only one species – *Tephrosia nubica* (Boiss.) Baker – has an increasing population, although nearly one-fifth are suspected to have a stable population trend (Figure 11). This can in part be explained by the fact that the records and perceptions of abundance of short-lived annuals are

highly dependent on the timing of both significant rainfall and observer visits (G.R. Feulner pers. comm. 2020).

A much more comprehensive understanding of general population size and trends of plant species in the country is needed in order to link potential effects from ongoing threats, such as development; this would also allow a more informed application of the IUCN Red List Categories and Criteria.

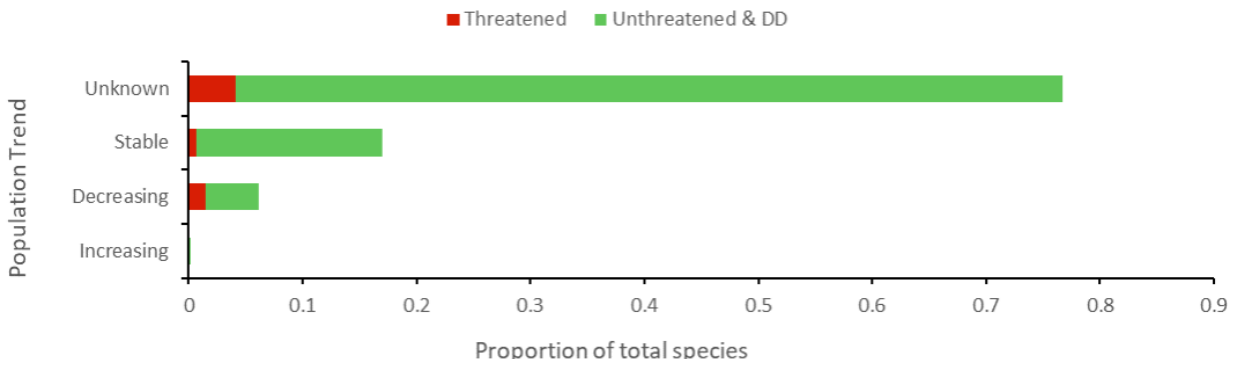


Figure 11. Population trend of UAE plant species.

3.5 Protected areas

Just over half (337) of all plant species are recorded from protected areas (Figure 12), perhaps to some degree the result of the relatively high level of survey work within

these areas. However, fewer than half (16 out of 38) of threatened species are confirmed from protected areas, and opportunities for protecting key areas for other threatened species need urgent attention.

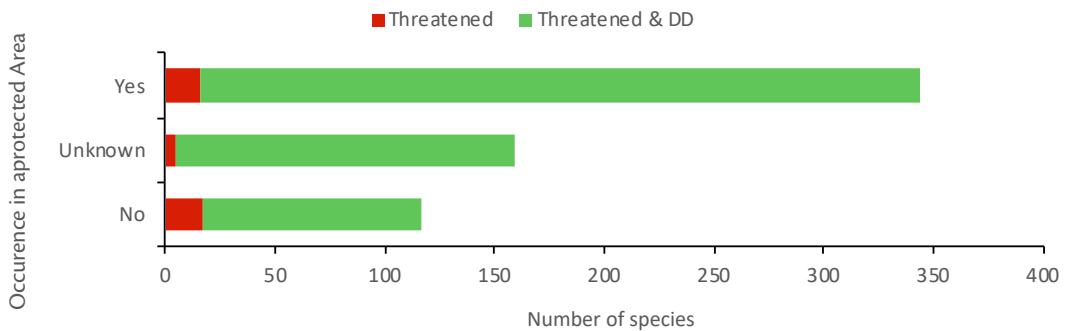


Figure 12. The occurrence of vascular plants within protected areas.

A number of threatened species are restricted to mountainous areas of the Hajar Mountains and the Ru'us al-Jibal, where there are fewer human activities, so they are protected to some degree even though they do not occur within protected areas. However, the impact of lowland threats (e.g., road and infrastructure development, livestock and feral animal grazing, water abstraction, hybridisation with introduced plants) is spreading to these areas too, and there is a clear need for the expansion of PA coverage in the mountains.

3.6 Plant use and trade

Plant trade and use is significant in the UAE, and has been responsible for the introduction of large numbers of

species to the country over a very long period of time, many of which have become naturalised, although relatively few have become widespread in wild (i.e., unirrigated) habitats. Of the 598 species included in this National Red List, nearly two-fifths (239 species) have some form of end use recorded (Figure 13).

There is a long history of plant use in traditional medicine in the UAE (Sakkir et al. 2012, Sajjad et al. 2017) and the wider region (Batanouny 2001). More than 130 species native to the country (Sakkir et al., 2012; S.M.R. Shahin pers. comm. 2019) have been reported to have medicinal use, and here, 150 species with human and veterinary medicinal application have been recorded, with information drawn from Jongbloed et al. (2003), Sakkir et al. (2012), Sajjad et al. (2017), and other sources.

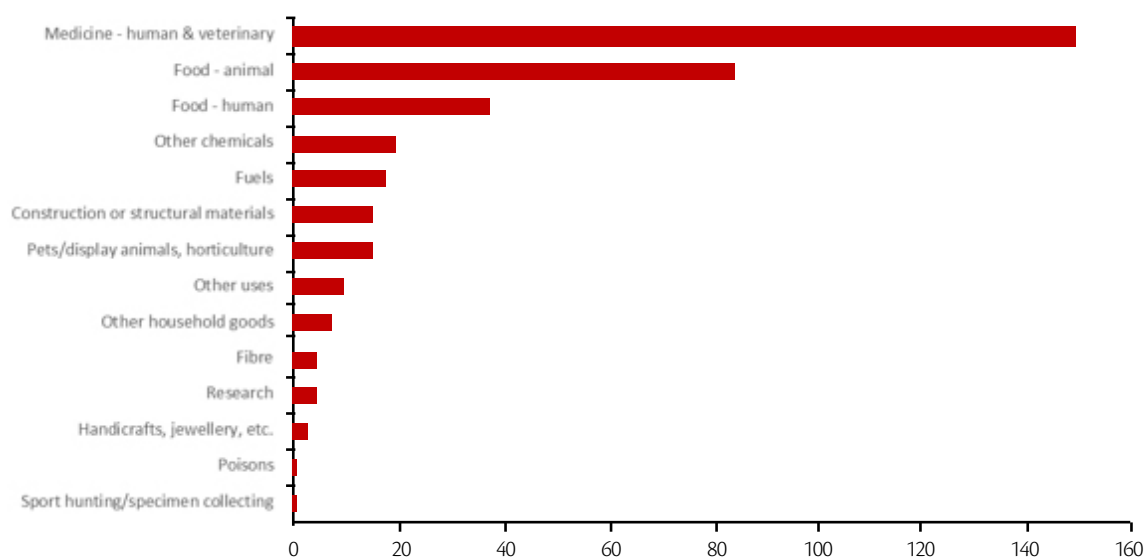


Figure 13. The end uses recorded for UAE plant species.

Animal fodder or free grazing is the second most cited use (Jongbloed et al., 2003; Al Mehairbi et al., 2019), however, grazing by livestock (e.g., camels, goats, sheep) and feral animals (e.g., goats, donkeys) presents a significant threat to some plant species in the UAE (Gallacher and Hill 2006a,b; El-Keblawy et al. 2009, EAD 2018).

Other uses include as fuel, for fibre, as dyes, and as ornamental and landscaping plants. Whilst landscaping has been responsible for the introduction of many non-

native plant species, the use of native species is being promoted (e.g. Alam et al., 2017). Potential uses being investigated include as a soil improver (*Achyranthes aspera*), in reed bed water treatment systems (*Cyperus laevigatus*, *Juncus socotranus*), for ecotourism (*Epipactis veratrifolia*, *Anvillea garcinii*), and as a windbreak or sand stabilisation (*Sporobolus ioclados*, *Salvadora persica*).

Several native species have also been recorded as crop wild relatives (Kameswara Rao 2013), and these require further research and conservation.

Case Study: The UAE Medicinal and Aromatic Plants

Dr. Suzan Marwan Ramadan Shahin,
Umm Al Quwain University (UAQU), UAE

In the UAE, there are at least 132 indigenous plants that have traditional medicinal use. The essential oils that are produced by the medicinal plants act as defensive phytochemicals, and are among the main contributors to their therapeutic benefits.

In the past, indigenous medicinal plants were the healing jewels of the country's Bedouin people. Their rich herbal traditional knowledge was used to treat various diseases, from the common ones (e.g., cold, headache, fatigue) to severe illnesses (e.g., kidney stones, heart diseases, tumors).

Despite the tradition of utilising the UAE's medicinal and aromatic plants, there is currently a huge gap between traditional practices and modern medicine. The rich knowledge of old people is far removed from the knowledge and practices of members of the current generation, who mostly depend on scientifically proven modern medications, and underestimate the intrinsic value and applications of native medicinal plants.

Currently, there are many challenges that affect the availability of native medicinal and aromatic plants in the country. First, some are mainly cultivated either as food commodities (e.g., *Eruca sativa* Mill., *Ocimum forsskaolii* Benth.) or as landscaping elements (e.g., *Acacia nilotica* (L.) Delile, *Aerva* (Burm.f.) Juss. ex Schult.), while less attention is given to cultivating and conserving the major group of native medicinal plants that lack food or landscaping potential (e.g., *Cleome amblyocarpa* Barr. & Murb., *Pluchea arabica* (Boiss.) Qaiser and Lack, *Capsella bursa-pastoris* (L.) Medik.). Nowadays, most of the cultivated native medicinal plants are not primarily grown for their traditional medicinal value. Urbanisation is another significant challenge that threatens the availability of native medicinal plants. Third, climate change is a global threat to plant biodiversity. Whilst climatic changes in the UAE are yet uncertain, they may have severe consequences on the availability of some plant species that will not be able to tolerate potentially dramatic climatic changes.

The future of the country's medicinal and aromatic plants is a sensitive topic, however, they can best be rescued through the following steps: First, using the taxonomic structure of this UAE National Red List of Vascular Plants, develop and maintain a national database of native medicinal and aromatic plants, and establish strategic action plans to propagate and conserve them. Second, raise awareness about the traditional and sustainable value of native medicinal and aromatic plants whilst avoiding overuse that has a negative environmental impact on the balanced ecosystem. Third, use research and investments to explore and scientifically validate the therapeutic benefits of native medicinal and aromatic plants. Fourth, leverage laws and legislation to control urbanisation activities that can severely impact the availability of native medicinal and aromatic plants. Fifth, focus on the native medicinal and aromatic plants that have multiple economic benefits (e.g., medicine, aromatherapy, cosmetics, perfumes, flavours, food preservation), and can have industrial applications and provide sustainable economic benefits to the country.

Finally, collaboration between all stakeholders – decision makers, researchers, investors, farmers, and community members – at all levels (government and NGOs) should be achieved to best mitigate and adapt to any of the expected future challenges.

3.7 Red List Index datapoint

Twenty-five of the plant species assessed as part of this National Red List were considered to have undergone a genuine change in status between 1996 and 2019 (Table 4).

Only one of these was thought to have improved in status (*Avicennia marina*), all others were thought to have deteriorated. As a result, the RLI declined from 0.9584 in 1996 to 0.9395 in 2019, indicating an increase in regional extinction risk (Figure 14).

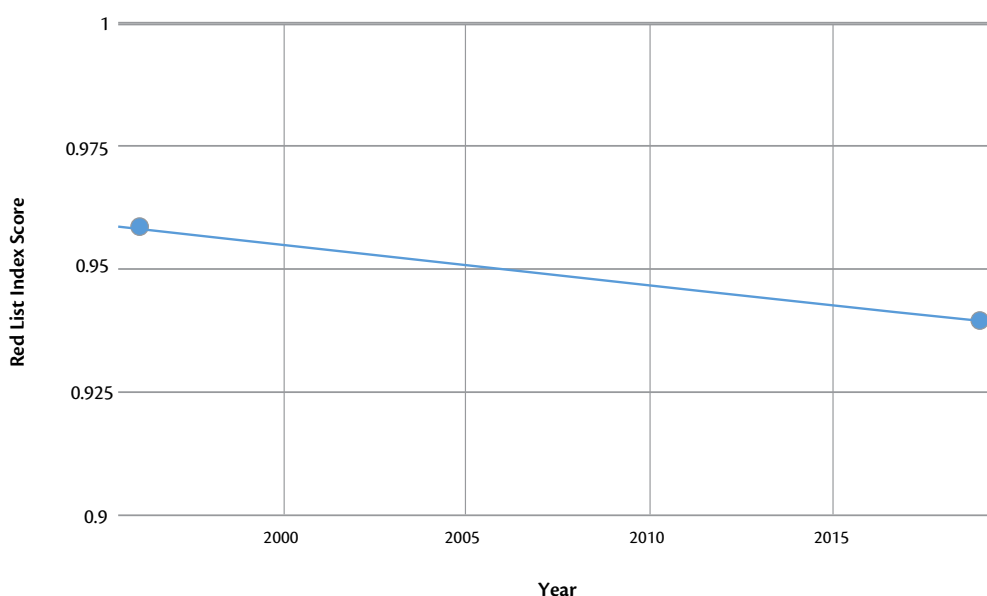


Figure 14. Red List Index (RLI) of plant species in the UAE for 1996 and 2019. An RLI value of 1 equates to all species being categorised as Least Concern (LC), and means that none are expected to go Extinct in the near future. An RLI of 0 indicates that all species have gone Extinct. N=433: non-Data Deficient extant species at the start of the period in 1996.

Direct comparisons with global plant trends are limited by the fact that only 71 of the UAE species have published assessments at the global scale, with all of these species assessed as LC at the global scale (i.e., an RLI score of 1). A more relevant comparison is with the Sampled Red List Index (SRLI) for plants (Brummitt et al. 2015) that is based

on the assessment of more than 4,697 randomly selected plant species globally. Brummitt et al. (2015) found the baseline value of the SRLI for plants to be 0.86, showing that the UAE plants are less threatened than the SRLI species at the global scale.

Species	1996 status	2019 status
<i>Cutandia dichotoma</i>	LC	CR
<i>Gymnarrhena micrantha</i>	CR	CR (PE)
<i>Anvillea garcinii</i>	NT	EN
<i>Astragalus squarrosus</i>	NT	EN
<i>Echiochilon jugatum</i>	LC	EN
<i>Halothamnus bottae</i>	LC	EN
<i>Limonium carnosum</i>	LC	EN
<i>Polygala irregularis</i>	LC	EN
<i>Rhanterium epapposum</i>	LC	EN
<i>Avicennia marina</i>	VU	NT
<i>Bienertia cycloptera</i>	LC	NT
<i>Calendula arvensis</i>	LC	NT
<i>Crotalaria persica</i>	LC	NT
<i>Eleocharis geniculata</i>	LC	NT
<i>Halophila ovalis</i>	LC	NT
<i>Halophila stipulacea</i>	LC	NT
<i>Haloxylon persicum</i>	LC	NT
<i>Indigofera oblongifolia</i>	LC	NT
<i>Ophioglossum polyphyllum</i>	LC	NT
<i>Halopyrum mucronatum</i>	LC	VU
<i>Limonium axillare</i>	LC	VU
<i>Mesembryanthemum nodiflorum</i>	LC	VU
<i>Spergularia marina</i>	NT	VU
<i>Sphaerocoma hookeri</i>	LC	VU
<i>Triraphis pumilio</i>	LC	VU

Table 4. The 25 genuine Red List status changes for plants in the UAE between 1996 and 2019. There are 16 terrestrial species that underwent deteriorations, whilst for marine species, there were nine changes (eight deteriorations and one improvement).

4. Conservation measures

4.1 Conservation of vascular plants in the UAE

The majority of UAE vascular plants do not require direct conservation measures, as many are widespread and are known to occur within one or more protected areas across their distribution ranges. Although most species face no major threats, further research is required into their life history and monitoring of their threats. It is recommended that the existing legislation for environmental impact assessments prior to urban

development should be fully implemented to limit or avoid the degradation of ecologically sensitive areas.

Due to time constraints at the National Red List Assessment Workshop, conservation actions required for plants were not fully explored; however, there is a clear need (see Figure 15) for resource and habitat protection, site protection, and habitat restoration. Grazing (with both direct and indirect impacts on the flora of the UAE) by livestock and feral animals is a further priority for conservation action.

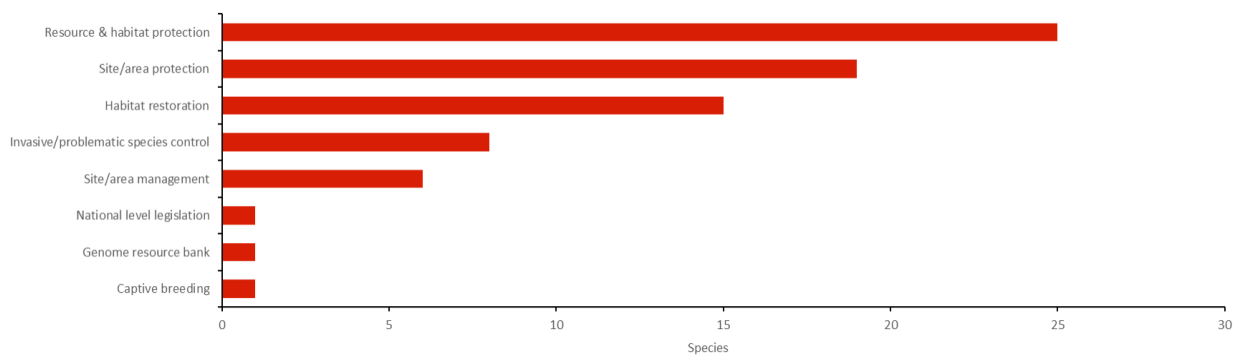


Figure 15. Conservation actions needed for UAE plants.

A significant number of species assessed as threatened, as well as potentially large numbers of DD species occur within protected areas, however, the effectiveness of protected area management for plant (as opposed to mammal) conservation needs investigation. There are also major gaps in coverage of protected areas in terms of both threatened species and geographically. For example, there are no known protected areas within the Ru'us al-Jibal; this species-rich yet undersurveyed mountainous area is coming under increasing threat from road, housing, tourism, and other infrastructure development.

Mangroves are a conservation success story for the UAE. They were estimated to be VU in 2010, and are now nationally considered NT due to planting programmes

and the designation of protected areas. This shows that habitats for plants can be effectively managed and restored. Mangroves protect the coastline against erosion, which is beneficial. Other marine species (such as seagrasses) also help promote marine fauna biodiversity, and would benefit from conservation action that takes into account the needs of other threatened species, such as the dugong.

The outputs of this project can be applied at the emirate scale to assist local governments in the prioritisation of sites for conservation, including internationally important biodiversity sites, e.g., Key Biodiversity Areas (Langhammer et al., 2007) and Alliance for Zero Extinction sites (Ricketts et al., 2005).

4.2 Red List versus priority for conservation action

More than 900 species of vascular plants have been identified in the UAE. Many plant names were rejected as invalid, erroneous, or as synonyms of other species, and further species were excluded from this National Red List as Not Applicable (NA) because they are known to be non-native to the country. It should be emphasised that this National Red List is just one step in developing a plant conservation strategy for the UAE, and it may be decided that some non-native plant species are of significant value (for example, cultural or economic) and deserve conservation effort.

Now that conservation has successfully helped the mangroves, funds could be focussed on other species at risk of extinction, in addition to continuing mangrove conservation.

5. Recommendations

5.1 Recommended actions

With nearly one-third of species considered Data Deficient, and the proportion of threatened species lying between 6.3% and 34.4% as a result of the high level of data deficiency, this National Red List sends a clear message of the need for further research into plant taxonomy, distributions, and populations in the UAE. National capacity needs to be supported and further developed, and species-rich areas, such as the Ru'us al-Jibal and the Hajar Mountains, need to be comprehensively surveyed.

The primary conservation needs for vascular plants in the country are (i) a comprehensive and repeated survey of the flora to understand distributions and trends; and (ii) a commitment to data sharing and publication, ensuring that information held at the level of individual emirates is made available to inform conservation whilst acknowledging the work of contributors.

Gymnarrhena micrantha Desf., known in the UAE only from Jebel Hafeet, has been assessed as Critically

Endangered (Possibly Extinct), and is not known to have been recorded since 1988. Surveys are required to confirm whether this species persists within the country, and to protect its habitat from known threats. The other threatened and Near Threatened species also require targeted research and conservation action. A full analysis of threatened species representation within protected areas should be undertaken, and the potential to expand the PA network within individual emirates and at the federal level should be explored. The management of protected areas should be reviewed to ensure that management actions take account of flora and are effectively implemented.

5.2 Future work

If the information on the species of the UAE is to be effectively integrated within the national development and environmental planning processes, then:

- The data collated need to be updated regularly through ongoing collaboration with the network of experts who have contributed their valuable time and knowledge to this National Red List;
- Links between IUCN and its partners, policymakers, and regional decision makers must be maintained and strengthened, and data made freely available to these organisations;
- A best-practice methodology for integrating biodiversity information within the environmental/development planning processes needs to be established. It is important that this methodology aims to provide the information in a user-friendly format for all stakeholders, and sets guidelines as to when and where the information should appropriately be made available.
- Ongoing taxonomic and nomenclatural review is required: e.g., 354 of the 598 species assessed here are not included in the checklist for the UAE that is under development by RBG Edinburgh as part of a wider Flora of the Arabian Peninsula checklist – taxonomy, native/non-native, and invalid records.

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Appendices

Appendix 1. List of participants in the UAE National Red List of Vascular Plants Assessment Workshop, Dubai, 15–19 September 2019

Name	Organisation
Aisha Al Hammadi	Al Ain Zoo, UAE
Lisa Banfield	Al Ain Zoo, UAE
Fatima Al Hantoubi	Dibba Al Fujairah Municipality, UAE
Tamer Khafaga	Dubai Desert Conservation Reserve (DDCR), UAE
Fatma Sulaiman Issa Al Sulaimani	Dubai Municipality, UAE
Randa Mohieldin Saadi Jaroor	Dubai Municipality, UAE
Gary R. Feulner	Dubai Natural History Group (DNHG), UAE
Shamshad Alam	Dubai Safari, UAE
Reza Khan	Dubai Safari, UAE
Hind Mohammed	Dubai Safari, UAE
Suzan Marwan Ramadan Shahin	Emirates Canadian University College, UAE
Jacky Judas	Emirates Nature–WWF, UAE
Maitha Mohamed Al Hameli	Environment Agency – Abu Dhabi (EAD), UAE
Lahaj Hamed Al Mansoori	Environment Agency – Abu Dhabi (EAD), UAE
Himansu Sekhar Das	Environment Agency – Abu Dhabi (EAD), UAE
Maher Ibrahim Kabshawi	Environment Agency – Abu Dhabi (EAD), UAE
Sabitha Sakkir	Environment Agency – Abu Dhabi (EAD), UAE
Mariam Juma	Environment and Protected Areas Authority (EPAA), UAE
Ali Al Hammoudi	Fujairah Municipality, UAE
Nuri Asmita	Fujairah Municipality, UAE
Gary Brown	Independent Consultant
Azaiez Ouled Belgacem	International Center for Agricultural Research in the Dry Areas (ICARDA), UAE
Houda Chelaifa	Khalifa University, UAE
Hector Hernandez	Khalifa University, UAE
Marina Tsaliki	Landscape Agency, Government of Ras Al Khaimah, UAE
Ahmed Mohammed Al Hamoodi	Ministry of Climate Change and Environment (MOCCA), UAE
Maitha Al Mheiri	Ministry of Climate Change and Environment (MOCCA), UAE
Muna Al Shamsi	Ministry of Climate Change and Environment (MOCCA), UAE
Hassina Ali	Ministry of Climate Change and Environment (MOCCA), UAE
Ahmed Mashli	Ministry of Climate Change and Environment (MOCCA), UAE
Abeer Mohammad Tayyem	Ministry of Climate Change and Environment (MOCCA), UAE
Noora Al Mansoori	New York University Abu Dhabi, UAE

Saeed Ali Al Kass	Public Services Department, Government of Ras Al Khaimah, UAE
Abdulla Al Balooshi	Public Services Department, Government of Ras Al Khaimah, UAE
Dave Aplin	Sharjah Botanic Garden, UAE
Sanjay Gairola	Sharjah Seed Bank & Herbarium (SSBH), UAE
Tamer Mahmoud	Sharjah Seed Bank & Herbarium (SSBH), UAE
Hatem Ahmed Shabana	Sharjah Seed Bank & Herbarium (SSBH), UAE
Ali Al-Keblawy	Sharjah University, UAE
Facilitators	
Craig Hilton-Taylor	Red List Unit, IUCN Cambridge, UK
Anna Puttick	Red List Unit, IUCN Cambridge, UK
David Allen	Red List Unit, IUCN Cambridge, UK

Appendix 2. Red List status of native plants in the UAE

CLASS	ORDER	Family	Species Name	Authority	UAE National Status	UAE Red List Criteria
GNETOPSIDA	EPHEDRALES	EPHEDRACEAE	<i>Ephedra foliata</i>	Boiss. ex C.A.Mey.	LC	
GNETOPSIDA	EPHEDRALES	EPHEDRACEAE	<i>Ephedra pachyclada</i>	Boiss.	LC	
LILIOPSIDA	ALISMATALES	CYMODOCACEAE	<i>Halodule uninervis</i>	(Forssk.) Boiss.	LC	
LILIOPSIDA	ALISMATALES	HYDROCHARITACEAE	<i>Halophila ovalis</i>	(R.Br.) Hook.f.	NT	B2ab(iii)
LILIOPSIDA	ALISMATALES	HYDROCHARITACEAE	<i>Halophila stipulacea</i>	(Forssk.) Asch.	NT	B2ab(iii)
LILIOPSIDA	ALISMATALES	HYDROCHARITACEAE	<i>Najas marina</i>	L.	DD	
LILIOPSIDA	ALISMATALES	POTAMOGETONACEAE	<i>Potamogeton lucens</i>	L.	DD	
LILIOPSIDA	ALISMATALES	POTAMOGETONACEAE	<i>Potamogeton nodosus</i>	Poir.	DD	
LILIOPSIDA	ALISMATALES	POTAMOGETONACEAE	<i>Potamogeton schweinfurthii</i>	A.Benn.	DD	
LILIOPSIDA	ALISMATALES	POTAMOGETONACEAE	<i>Stuckenia pectinata</i>	(L.) Börner	DD	
LILIOPSIDA	ALISMATALES	POTAMOGETONACEAE	<i>Zannichellia palustris</i>	L.	DD	
LILIOPSIDA	ALISMATALES	RUPPIACEAE	<i>Ruppia maritima</i>	L.	DD	
LILIOPSIDA	ARECALES	ARECACEAE	<i>Nannorrhops ritchieana</i>	(Griff.) Aitch.	NT	B1a+2a
LILIOPSIDA	ARECALES	ARECACEAE	<i>Phoenix dactylifera</i>	L.	LC	
LILIOPSIDA	ASPARAGALES	ASPARAGACEAE	<i>Asparagus falcatus</i>	L.	DD	
LILIOPSIDA	ASPARAGALES	ASPARAGACEAE	<i>Dipcadi biflorum</i>	Ghaz.	EN	B1ab(iii,iv,v)
LILIOPSIDA	ASPARAGALES	ASPARAGACEAE	<i>Dipcadi serotinum</i>	(L.) Medik.	LC	
LILIOPSIDA	ASPARAGALES	ASPARAGACEAE	<i>Leopoldia longipes</i>	(Boiss.) Losinsk.	LC	
LILIOPSIDA	ASPARAGALES	ASPHODELACEAE	<i>Asphodelus tenuifolius</i>	Cav.	LC	
LILIOPSIDA	ASPARAGALES	IRIDACEAE	<i>Moraea sisyrinchium</i>	(L.) Ker Gawl.	LC	
LILIOPSIDA	ASPARAGALES	IXIOLIRIACEAE	<i>Ixiolirion tataricum</i>	(Pall.) Schult. & Schult.f.	LC	
LILIOPSIDA	ASPARAGALES	ORCHIDACEAE	<i>Epipactis veratrifolia</i>	Boiss. & Hohen.	VU	D1
LILIOPSIDA	POALES	CYPERACEAE	<i>Bolboschoenus maritimus</i>	(L.) Palla	DD	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cladium mariscus</i>	(L.) Pohl	CR (PE)	D
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus arenarius</i>	Retz.	LC	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus aucheri</i>	Jaub. & Spach	LC	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus conglomeratus</i>	Rottb.	LC	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus jeminicus</i>	Rottb.	DD	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus laevigatus</i>	L.	LC	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus pseuderemicus</i>	Kukkonen & Väre	DD	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus rotundus</i>	L.	LC	
LILIOPSIDA	POALES	CYPERACEAE	<i>Cyperus rubicundus</i>	Vahl	DD	
LILIOPSIDA	POALES	CYPERACEAE	<i>Eleocharis geniculata</i>	(L.) Roem. & Schult.	NT	B1ab(iii,v)
LILIOPSIDA	POALES	CYPERACEAE	<i>Fimbristylis dichotoma</i>	(L.) Vahl	DD	
LILIOPSIDA	POALES	CYPERACEAE	<i>Fimbristylis ferruginea</i>	(L.) Vahl	LC	
LILIOPSIDA	POALES	CYPERACEAE	<i>Schoenoplectus litoralis</i>	(Schrad.) Palla	LC	

CLASS	ORDER	Family	Species Name	Authority	UAE National Status	UAE Red List Criteria
LILIOPSIDA	POALES	CYPERACEAE	<i>Schoenus nigricans</i>	L.	LC	
LILIOPSIDA	POALES	JUNACEAE	<i>Juncus rigidus</i>	Desf.	LC	
LILIOPSIDA	POALES	JUNACEAE	<i>Juncus socotranus</i>	(Buchenau) Snogerup	LC	
LILIOPSIDA	POALES	POACEAE	<i>Aegilops kotschy</i>	Boiss.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Aeluropus lagopoides</i>	(L.) Trin. ex Thwaites	LC	
LILIOPSIDA	POALES	POACEAE	<i>Aeluropus littoralis</i>	(Gouan) Parl.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Aristida abnormis</i>	Chiov.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Aristida adscensionis</i>	L.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Aristida funiculata</i>	Trin. & Rupr.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Aristida mutabilis</i>	Trin. & Rupr.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Arundo donax</i>	L.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Avena barbata</i>	Pott ex Link	DD	
LILIOPSIDA	POALES	POACEAE	<i>Brachiaria eruciformis</i>	(Sm.) Griseb.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Brachiaria reptans</i>	(L.) C.A.Gardner & C.E.Hubb.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Brachypodium distachyon</i>	(L.) PBeauv.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Bromus danthoniae</i>	Trin.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Bromus fasciculatus</i>	C.Presl	DD	
LILIOPSIDA	POALES	POACEAE	<i>Bromus lanceolatus</i>	Roth	DD	
LILIOPSIDA	POALES	POACEAE	<i>Bromus madritensis</i>	L.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Bromus pectinatus</i>	Thunb.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Castellia tuberculosa</i>	(Moris) Bor	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cenchrus ciliaris</i>	L.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cenchrus divinus</i>	(J.F.Gmel.) Verloove, Govaerts & Buttler	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cenchrus orientalis</i>	(Rich.) Morrone	DD	
LILIOPSIDA	POALES	POACEAE	<i>Cenchrus pennisetiformis</i>	Steud.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cenchrus setiger</i>	Vahl.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Centropodia forskalii</i>	(Vahl) Cope	LC	
LILIOPSIDA	POALES	POACEAE	<i>Centropodia fragilis</i>	(Guinet & Sauvage) Cope	DD	
LILIOPSIDA	POALES	POACEAE	<i>Chloris barbata</i>	Sw.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Chloris flagellifera</i>	(Nees) P.M.Peterson	LC	
LILIOPSIDA	POALES	POACEAE	<i>Coelachyrum brevifolium</i>	Hochst. & Nees	LC	
LILIOPSIDA	POALES	POACEAE	<i>Coelachyrum piercei</i>	(Benth.) Bor	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cutandia dichotoma</i>	(Forssk.) Trab.	CR	B1ab(iii)
LILIOPSIDA	POALES	POACEAE	<i>Cutandia memphitica</i>	(Spreng.) Benth.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cymbopogon commutatus</i>	(Steud.) Stapf	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cymbopogon iwarancusa</i>	(Jones ex Roxb.) Schult.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Cymbopogon schoenanthus</i>	(L.) Spreng.	LC	

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LILIOPSIDA	POALES	POACEAE	<i>Dactyloctenium aegyptium</i>	(L.) Willd.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Dactyloctenium scindicum</i>	Boiss.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Desmostachya bipinnata</i>	(L.) Stapf	DD	
LILIOPSIDA	POALES	POACEAE	<i>Dichanthium foveolatum</i>	(Delile) Roberty	LC	
LILIOPSIDA	POALES	POACEAE	<i>Digitaria ciliaris</i>	(Retz.) Koeler	LC	
LILIOPSIDA	POALES	POACEAE	<i>Digitaria nodosa</i>	Parl.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Digitaria sanguinalis</i>	(L.) Scop.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Elionurus royleanus</i>	Nees ex A.Rich.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Enneapogon desvauxii</i>	P.Beauv.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Enneapogon persicus</i>	Boiss.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Eragrostis barrelieri</i>	Daveau	LC	
LILIOPSIDA	POALES	POACEAE	<i>Eragrostis cilianensis</i>	(All.) Jaunchen	LC	
LILIOPSIDA	POALES	POACEAE	<i>Eragrostis ciliaris</i>	(L.) R.Br.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Eragrostis pilosa</i>	(L.) P.Beauv.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Eragrostis tenella</i>	(L.) P.Beauv. ex Roem. & Schult.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Gastridium phleoides</i>	(Nees & Meyen) C.E.Hubb.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Halopyrum mucronatum</i>	(L.) Stapf	VU	B1ab(ii,iii,v)
LILIOPSIDA	POALES	POACEAE	<i>Hyparrhenia hirta</i>	(L.) Stapf	LC	
LILIOPSIDA	POALES	POACEAE	<i>Imperata cylindrica</i>	(L.) P.Beauv.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Lamarckia aurea</i>	(L.) Moench	LC	
LILIOPSIDA	POALES	POACEAE	<i>Lasiurus scindicus</i>	Henrard	LC	
LILIOPSIDA	POALES	POACEAE	<i>Lolium persicum</i>	Boiss. & Hohen.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Melanocenchris abyssinica</i>	(R.Br. ex Fresen.) Hochst.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Panicum turgidum</i>	Forssk.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Phalaris minor</i>	Retz.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Phragmites australis</i>	(Cav.) Trin. ex Steud.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Piptatherum holciforme</i>	(M.Bieb.) Roem. & Schult.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Poa bulbosa</i>	L.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Poa sinaica</i>	Steud.	DD	
LILIOPSIDA	POALES	POACEAE	<i>Polypogon monspeliensis</i>	(L.) Desf.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Rostraria cristata</i>	(L.) Tzvelev	DD	
LILIOPSIDA	POALES	POACEAE	<i>Rostraria pumila</i>	(Lam.) Tzvelev	LC	
LILIOPSIDA	POALES	POACEAE	<i>Saccharum griffithii</i>	Munro ex Aitch.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Saccharum kajkaiense</i>	(Melderis) Melderis	VU	B1ab(iii)+2ab(iii); D
LILIOPSIDA	POALES	POACEAE	<i>Schismus arabicus</i>	Nees	DD	
LILIOPSIDA	POALES	POACEAE	<i>Schismus barbatus</i>	(L.) Thell.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Sphenopus divaricatus</i>	(Gouan) Rchb.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Sporobolus ioclados</i>	(Nees ex Trin.) Nees	LC	

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LILIOPSIDA	POALES	POACEAE	<i>Sporobolus spicatus</i>	(Vahl) Kunth	LC	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis acutiflora</i>	(Trin. & Rupr.) De Winter	DD	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis ciliata</i>	(Desf.) De Winter	DD	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis drarii</i>	(Täckh.) De Winter	LC	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis foexiana</i>	(Maire & Wilczek) De Winter	NT	B1a+2a
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis hirtigluma</i>	(Steud. ex Trin. & Rupr.) De Winter	LC	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis lanata</i>	(Forssk.) De Winter	DD	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis obtusa</i>	(Delile) Nees	DD	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis paradisea</i>	(Edgew.) De Winter	DD	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis plumosa</i>	(L.) Munro ex T.Anderson	LC	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis raddiana</i>	(Savi) De Winter	LC	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis sokotrana</i>	(Vierh.) De Winter	LC	
LILIOPSIDA	POALES	POACEAE	<i>Stipagrostis uniplumis</i>	(Licht.) De Winter	LC	
LILIOPSIDA	POALES	POACEAE	<i>Stipellula capensis</i>	(Thunb.) Röser & Hamasha	LC	
LILIOPSIDA	POALES	POACEAE	<i>Tetrapogon villosus</i>	Desf.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Tragus berteronianus</i>	Schult.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Tragus racemosus</i>	(L.) All.	LC	
LILIOPSIDA	POALES	POACEAE	<i>Tricholaena teneriffae</i>	(L.f.) Link	LC	
LILIOPSIDA	POALES	POACEAE	<i>Tripidium ravennae</i>	(L.) H.Scholz	LC	
LILIOPSIDA	POALES	POACEAE	<i>Triraphis pumilio</i>	R.Br.	VU	B1ab(iii,iv,v)
LILIOPSIDA	POALES	TYPHACEAE	<i>Typha domingensis</i>	Pers.	LC	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Ammi majus</i>	L.	LC	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Ducrosia anethifolia</i>	(DC.) Boiss.	LC	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Pimpinella eriocarpos</i>	Sol.	LC	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Pimpinella puberula</i>	(DC.) Boiss.	DD	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Pimpinella schweinfurthii</i>	Asch.	DD	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Pycnocycla cespitosa</i>	Boiss. & Hausskn.	LC	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Scandix pecten-veneris</i>	L.	LC	
MAGNOLIOPSIDA	APIALES	APIACEAE	<i>Torilis nodosa</i>	(L.) Gaertn.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Anthemis odontostephana</i>	Boiss.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Anvillea garcinii</i>	(Burm.f.) DC.	EN	B1ab(iii); D
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Atractylis cancellata</i>	L.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Atractylis carduus</i>	C.Chr.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Blumea bovei</i>	Vatke	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Calendula arvensis</i>	L.	NT	A2a
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Carduus pycnocephalus</i>	L.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Carthamus oxyacantha</i>	M.Bieb.	DD	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Centaurea pseudosinaica</i>	Czerep.	LC	

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MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Centaurea wendelboi</i>	Wagenitz	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Crepis kotschyana</i>	Boiss.	DD	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Cyanthillium cinereum</i>	(L.) H. Rob.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Dicoma schimperii</i>	(DC.) Baill. ex O. Hoffm.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Echinops erinaceus</i>	Kit Tan	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Eclipta prostrata</i>	(L.) L.	DD	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Filago desertorum</i>	Pomel	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Filago griffithii</i>	(A. Gray) Andrés-Sánchez & Galbany	DD	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Filago pyramidata</i>	L.	DD	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Gymnarrhena micrantha</i>	Desf.	CR (PE)	B1ab(iii)+2ab(iii)
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Helichrysum glumaceum</i>	DC.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Iffloga spicata</i>	(Forssk.) Sch. Bip.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Iphiona aucheri</i>	(Boiss.) Anderb.	DD	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Iphiona scabra</i>	DC.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Jurinea berardioidea</i>	Diels	NT	D1
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Jurinea carduiiformis</i>	(Jaub. & Spach) Boiss.	NT	B1b(iii)
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Koelpinia linearis</i>	Pall.	NT	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Lactuca dissecta</i>	D. Don	NT	B1a+2a; D1
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Lactuca orientalis</i>	(Boiss.) Boiss.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea bornmuelleri</i>	(Hauskn. ex Bornm.) Bornm.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea capitata</i>	(Spreng.) Dandy	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea fragilis</i>	(Asso) Pau	DD	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea massauensis</i>	(Fresen.) Sch. Bip. ex O. Kuntze	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea mucronata</i>	(Forssk.) Muschl.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea nudicaulis</i>	Hook. f.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea omanensis</i>	N. Kilian	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Launaea procumbens</i>	(Roxb.) Amin	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Matricaria aurea</i>	(Loefl.) Sch. Bip.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Pallenis hierochuntica</i>	(Michon) Greuter	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Phagnalon schweinfurthii</i>	Sch. Bip. ex Schweinf.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Pluchea dioscoridis</i>	(L.) DC.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Pulicaria arabica</i>	(L.) Cass.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Pulicaria edmondsonii</i>	E. Gamal-Eldin	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Pulicaria glutinosa</i>	Jaub. & Spach	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Pulicaria undulata</i>	(L.) C. A. Mey.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Reichardia tingitana</i>	(L.) Roth	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Rhanterium epapposum</i>	Oliv.	EN	A2ac
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Scorzonera tortuosissima</i>	Boiss.	DD	

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MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Senecio breviflorus</i>	(Kadereit) Greuter	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Senecio glaucus</i>	L.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Seriphidium sieberi</i>	(Besser) K.Bremer & Humphries ex Y.R.Ling	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Sonchus oleraceus</i>	L.	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Urospermum picroides</i>	(L.) Scop. ex F.W.Schmidt	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Vernonia arabica</i>	F.G.Davies	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Vicoa divaricata</i>	(Cass.) Oliv. & Hiern	LC	
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Volutaria sinaica</i>	(DC.) Wagenitz	EN	D
MAGNOLIOPSIDA	ASTERALES	ASTERACEAE	<i>Zoegea purpurea</i>	Fresen.	LC	
MAGNOLIOPSIDA	ASTERALES	CAMPANULACEAE	<i>Campanula erinus</i>	L.	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Anchusa aegyptiaca</i>	(L.) A.DC.	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Arnebia decumbens</i>	(Vent.) Coss. & Kralik	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Arnebia hispidissima</i>	(Sieber ex Lehm.) A.DC.	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Buglossoides tenuiflora</i>	(L.f.) I.M.Johnst.	DD	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Echiochilon callianthum</i>	Lönn	VU	D1
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Echiochilon jugatum</i>	I.M.Johnst.	EN	B1ab(iii,iv,v)
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Echiochilon persicum</i>	(Burm.f.) I.M.Johnst.	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Gastrocotyle hispida</i>	(Forssk.) Bunge	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Lappula spinocarpos</i>	(Forssk.) Asch. ex Kuntze	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Microparacaryum intermedium</i>	(Fresen.) Hilger & Podl.	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Moltkiopsis ciliata</i>	(Forssk.) I.M.Johnst.	LC	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Ogastemma pusillum</i>	(Coss. & Durieu ex Bonnet & Barratte) Brummitt	DD	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Trichodesma africanum</i>	(L.) Sm.	DD	
MAGNOLIOPSIDA	BORAGINALES	BORAGINACEAE	<i>Trichodesma ehrenbergii</i>	Schweinf. ex Boiss.	LC	
MAGNOLIOPSIDA	BORAGINALES	CORDIACEAE	<i>Cordia quercifolia</i>	Klotzsch	CR	D
MAGNOLIOPSIDA	BORAGINALES	EHRETIACEAE	<i>Ehretia obtusifolia</i>	Hochst. ex A.DC.	CR	D
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Euploca rariflora</i>	(Stocks) Diane & Hilger	DD	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Euploca strigosa</i>	(Willd.) Diane & Hilger	DD	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Heliotropium bacciferum</i>	Forssk.	DD	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Heliotropium brevilmbe</i>	Boiss.	LC	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Heliotropium digynum</i>	(Forssk.) Asch. ex C.Chr.	LC	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Heliotropium europaeum</i>	L.	LC	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Heliotropium kotschy</i>	(Bunge) Gürke	LC	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Heliotropium lasiocarpum</i>	Fisch. & C.A.Mey.	DD	
MAGNOLIOPSIDA	BORAGINALES	HELIOTROPIACEAE	<i>Heliotropium ramosissimum</i>	(Lehm.) Sieber ex DC.	DD	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Anastatica hierochuntica</i>	L.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Cakile arabica</i>	Velen.	DD	

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MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Capsella bursa-pastoris</i>	(L.) Medik.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Clypeola aspera</i>	(Grauer) Turrill	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Clypeola jonthlaspi</i>	L.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Diplotaxis harra</i>	(Forssk.) Boiss.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Eremobium aegyptiacum</i>	(Spreng.) Asch. ex Boiss.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Erucaria crassifolia</i>	(Forssk.) Delile	DD	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Erucaria hispanica</i>	(L.) Druce	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Farsetia aegyptia</i>	Turra	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Farsetia heliophila</i>	Bunge ex Coss.	DD	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Farsetia linearis</i>	Decne. ex Boiss.	DD	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Farsetia longisiliqua</i>	Decne.	DD	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Farsetia stylosa</i>	R.Br.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Morettia canescens</i>	Boiss.	DD	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Morettia parviflora</i>	Boiss.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Notoceras bicornis</i>	(Aiton) Amo	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Physorhynchus chamaerapistrum</i>	(Boiss.) Boiss.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Savignya parviflora</i>	(Delile) Webb	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Schimpera arabica</i>	Hochst. & Steud.	VU	B1ab(iii)
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Sisymbrium erysimoides</i>	Desf.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Sisymbrium irio</i>	L.	LC	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Strigosella africana</i>	(L.) Botsch.	DD	
MAGNOLIOPSIDA	BRASSICALES	BRASSICACEAE	<i>Zilla spinosa</i>	(L.) Prantl	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Capparis cartilaginea</i>	Decne.	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Capparis spinosa</i>	L.	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Cleome ambylocarpa</i>	Barratte & Murb.	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Cleome brachycarpa</i>	Vahl ex DC.	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Cleome droserifolia</i>	(Forssk.) Delile	DD	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Cleome pallida</i>	Kotschy	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Cleome quinquenervia</i>	DC.	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Cleome rupicola</i>	Vicary	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Cleome scaposa</i>	DC.	LC	
MAGNOLIOPSIDA	BRASSICALES	CAPPARACEAE	<i>Maerua crassifolia</i>	Forssk.	CR	D
MAGNOLIOPSIDA	BRASSICALES	MORINGACEAE	<i>Moringa peregrina</i>	(Forssk.) Fiori	LC	
MAGNOLIOPSIDA	BRASSICALES	RESEDACEAE	<i>Ochradenus arabicus</i>	Chaudhary, Hillc. & A.G.Mill.	LC	
MAGNOLIOPSIDA	BRASSICALES	RESEDACEAE	<i>Ochradenus baccatus</i>	Delile	DD	
MAGNOLIOPSIDA	BRASSICALES	RESEDACEAE	<i>Ochradiscus aucheri</i>	(Boiss.) S.Blanco & C.E.Wetzel	LC	
MAGNOLIOPSIDA	BRASSICALES	RESEDACEAE	<i>Oligomeris linifolia</i>	(Vahl ex Hornem.) J.F.Macbr.	LC	

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MAGNOLIOPSIDA	BRASSICALES	RESEDACEAE	<i>Reseda arabica</i>	Boiss.	DD	
MAGNOLIOPSIDA	BRASSICALES	RESEDACEAE	<i>Reseda aucheri</i>	Boiss.	LC	
MAGNOLIOPSIDA	BRASSICALES	RESEDACEAE	<i>Reseda muricata</i>	C.Presl	DD	
MAGNOLIOPSIDA	BRASSICALES	SALVADORACEAE	<i>Salvadora persica</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	AIZOACEAE	<i>Aizoon canariense</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	AIZOACEAE	<i>Mesembryanthemum nodiflorum</i>	L.	VU	B2ab(ii,iii)
MAGNOLIOPSIDA	CARYOPHYLLALES	AIZOACEAE	<i>Zaleya pentandra</i>	(L.) C.Jeffrey	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	AMARANTHACEAE	<i>Achyranthes aspera</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	AMARANTHACEAE	<i>Aerva javanica</i>	(Burm.f.) Juss. ex Schult.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	AMARANTHACEAE	<i>Amaranthus graecizans</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	AMARANTHACEAE	<i>Chenopodium murale</i>	(L.) S.Fuentes, Uotila & Borsch	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	AMARANTHACEAE	<i>Digera muricata</i>	Mart.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	AMARANTHACEAE	<i>Pupalia lappacea</i>	(L.) Juss.	EN	D
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Arenaria leptoclados</i>	(Rchb.) Guss.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Arenaria serpyllifolia</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Dianthus crinitus</i>	Sm.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Gypsophila bellidifolia</i>	Boiss.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Minuartia meyeri</i>	(Boiss.) Bornm.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Polycarpha repens</i>	(Forssk.) Asch. & Schweinf.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Polycarpha robbairea</i>	(Kuntze) Greuter & Burdet	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Polycarpha spicata</i>	Wight ex Arn.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Polycarpon tetraphyllum</i>	(L.) L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Silene apetala</i>	Willd.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Silene austroiranica</i>	Rech.f., Aellen & Esfand.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Silene linearis</i>	Decne.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Silene villosa</i>	Forssk.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Spergularia diandra</i>	(Guss.) Heldr.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Spergularia flaccida</i>	(Madden) I.M.Turner	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CARYOPHYLLACEAE	<i>Spergularia marina</i>	(L.) Griseb.	VU	B1ab(iii)
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Agriophyllum minus</i>	Fisch. & C.A.Mey.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Anabasis setifera</i>	Moq.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Arthrocaulon macrostachyum</i>	(Moric.) Piirainen & G.Kadereit	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Atriplex leucoclada</i>	Boiss.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Bassia eriophora</i>	(Schrad.) Asch.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Bassia muricata</i>	(L.) Asch.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Bienertia cycloptera</i>	Bunge	NT	B1ab(iii)
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Caroxylon arabicum</i>	(Botsch.) Akhani & Roalson	DD	

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MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Caroxylon cyclophyllum</i>	(Baker) Akhani & Roalson	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Caroxylon imbricatum</i>	(Forssk.) Moq.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Caroxylon tetrandrum</i>	(Forssk.) Akhani & Roalson	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Cornulaca aucheri</i>	Moq	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Cornulaca monacantha</i>	Delile	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Halocnemum strobilaceum</i>	(Pall.) M.Bieb.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Halopeplis perfoliata</i>	(Forssk.) Bunge ex Ung.-Sternb.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Halothamnus bottae</i>	Jaub. & Spach	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Haloxylon persicum</i>	Bunge ex Boiss. & Buhse	EN	B1ab(iii)
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Haloxylon salicornicum</i>	(Moq.) Bunge ex Boiss.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Kaviria rubescens</i>	(Franch.) Akhani	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Salsola drummondii</i>	Ulbr.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Salsola schweinfurthii</i>	Solms	EN	B1ab(iii,v)+2ab(iii,v)
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Seidlitzia rosmarinus</i>	Bunge. ex Boiss	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Suaeda aegyptiaca</i>	(Hasselq.) Zohary	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Suaeda maritima</i>	(L.) Dumort.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	CHENOPODIACEAE	<i>Suaeda vermiculata</i>	Forssk. ex J.F.Gmel.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	GISEKIACEAE	<i>Gisekia pharnaceoides</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Cometes surattensis</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Gymnocarpus decander</i>	Forssk.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Gymnocarpus sclerocephalus</i>	(Decne.) Ahlgren & Thulin	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Herniaria hemistemon</i>	J.Gay	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Herniaria hirsuta</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Herniaria maskatensis</i>	Bornm.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Paronychia arabica</i>	(L.) DC.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Pteranthus dichotomus</i>	Forssk.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	ILLECEBRACEAE	<i>Sphaerocoma hookeri</i>	T.Anderson	VU	B1ab(iii,iv,v)
MAGNOLIOPSIDA	CARYOPHYLLALES	MOLLUGINACEAE	<i>Glinus lotoides</i>	L.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	MOLLUGINACEAE	<i>Limeum arabicum</i>	Friedrich	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	MOLLUGINACEAE	<i>Limeum obovatum</i>	Vicary	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	NYCTAGINACEAE	<i>Boerhavia diffusa</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	NYCTAGINACEAE	<i>Boerhavia elegans</i>	Choisy	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	NYCTAGINACEAE	<i>Boerhavia repens</i>	L.	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	NYCTAGINACEAE	<i>Commicarpus boissieri</i>	(Heimerl) Cufod.	DD	
MAGNOLIOPSIDA	CARYOPHYLLALES	NYCTAGINACEAE	<i>Commicarpus helenae</i>	(Romer & Schultes) Meikle	LC	
MAGNOLIOPSIDA	CARYOPHYLLALES	NYCTAGINACEAE	<i>Commicarpus stenocarpus</i>	(Chiov.) Cufod.	DD	
MAGNOLIOPSIDA	CUCURBITALES	CUCURBITACEAE	<i>Citrullus colocynthis</i>	(L.) Schrad.	LC	
MAGNOLIOPSIDA	CUCURBITALES	CUCURBITACEAE	<i>Corallocarpus epigaeus</i>	(Rottler) Hook.f.	DD	

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MAGNOLIOPSIDA	CUCURBITALES	CUCURBITACEAE	<i>Corallocarpus schimperi</i>	(Naudin) Hook.f.	DD	
MAGNOLIOPSIDA	CUCURBITALES	CUCURBITACEAE	<i>Cucumis prophetarum</i>	L.	LC	
MAGNOLIOPSIDA	DIPSACALES	CAPRIFOLIACEAE	<i>Lomelosia olivieri</i>	(Coult.) Greuter & Burdet	LC	
MAGNOLIOPSIDA	DIPSACALES	CAPRIFOLIACEAE	<i>Pterocephalus brevis</i>	Coult.	DD	
MAGNOLIOPSIDA	DIPSACALES	CAPRIFOLIACEAE	<i>Valerianella szovitsiana</i>	Fisch. & C.A.Mey.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Alhagi maurorum</i>	Medik.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Argyrolobium roseum</i>	(Cambess.) Jaub. & Spach	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus annularis</i>	Forssk.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus arpilobus</i>	Kar. & Kir.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus biabanensis</i>	Širj. & Rech.f.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus crenatus</i>	Schult.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus eremophilus</i>	Boiss.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus fasciculifolius</i>	Boiss.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus hamosus</i>	L.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus schimperi</i>	Boiss.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus squarrosus</i>	Bunge	EN	B1ab(iii)
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus tribulooides</i>	Delile	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Astragalus vogelii</i>	(Webb) Bornm.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Chesneya parviflora</i>	Jaub. & Spach	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Crotalaria aegyptiaca</i>	Benth.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Crotalaria persica</i>	(Burm.f.) Merr.	NT	B1ab(iii,iv,v)
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Hippocrepis areolata</i>	Desv.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Hippocrepis constricta</i>	Kunze	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Hippocrepis unisiliquosa</i>	L.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera arabica</i>	Jaub. & Spach	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera argentea</i>	Burm.f.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera articulata</i>	Gouan	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera coerulea</i>	Roxb.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera colutea</i>	(Burm.f.) Merr.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera cordifolia</i>	B.Heyne ex Roth	VU	D2
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera intricata</i>	Boiss.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera oblongifolia</i>	Forssk.	NT	B1b(iii)
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Indigofera spinosa</i>	Forssk.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Leobordea platycarpa</i>	(Viv.) B.–E.van Wyk & Boatwr.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Lotus arabicus</i>	L.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Lotus garcinii</i>	Ser.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Lotus halophilus</i>	Boiss. & Spruner	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Lotus larius</i>	Rech.f., Aellen & Esfand.	DD	

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MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Lotus schimperi</i>	Boiss.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Medicago laciniata</i>	(L.) Mill.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Medicago polymorpha</i>	L.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Melilotus indicus</i>	(L.) All.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Microcharis disjuncta</i>	(J.B.Gillett) Schrire	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Ononis reclinata</i>	L.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Ononis serrata</i>	Forssk.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Ononis sicula</i>	Guss.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Prosopis cineraria</i>	(L.) Druce	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Prosopis farcta</i>	(Banks & Sol.) J.F.Macbr.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Pseudolotus villosus</i>	(Blatt. & Hallb.) Ali & D.D.Sokoloff	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Rhynchosia minima</i>	(L.) DC.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Rhynchosia schimperi</i>	Hochst. ex Boiss.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Scorpiurus muricatus</i>	L.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Senna alexandrina</i>	Mill.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Senna holosericea</i>	(Fresen.) Greuter	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Senna italica</i>	Mill.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Taverniera cuneifolia</i>	(Roth) Arn.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Taverniera lappacea</i>	(Forssk.) DC.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Taverniera sparteae</i>	DC.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Tephrosia apollinea</i>	(Delile) DC.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Tephrosia nubica</i>	(Boiss.) Baker	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Tephrosia persica</i>	Boiss.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Tephrosia uniflora</i>	Pers.	DD	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Trigonella glabra</i>	Thunb.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Trigonella stellata</i>	Forssk.	LC	
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Vachellia flava</i>	(Forssk.) Kyal. & Boatwr.	NT	B1ab(iii)
MAGNOLIOPSIDA	FABALES	FABACEAE	<i>Vachellia tortilis</i>	(Forssk.) Galasso & Banfi	LC	
MAGNOLIOPSIDA	FABALES	POLYGALACEAE	<i>Polygala erioptera</i>	DC.	LC	
MAGNOLIOPSIDA	FABALES	POLYGALACEAE	<i>Polygala irregularis</i>	Boiss.	EN	B1ab(iii)
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Calotropis procera</i>	(Aiton) Dryand.	LC	
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Desmidorchis arabica</i>	(N.E.Br.) Meve & Liede	LC	
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Desmidorchis flava</i>	(N.E.Br.) Meve & Liede	EN	D
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Glossonema varians</i>	(Stocks) Benth. ex Hook.f.	NT	D1
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Leptadenia pyrotechnica</i>	(Forssk.) Decne.	LC	
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Nerium oleander</i>	L.	LC	
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Pentatropis nivalis</i>	(J.F.Gmel.) D.V.Field & J.R.I.Wood	LC	
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Pergularia tomentosa</i>	L.	LC	

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MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Periploca aphylla</i>	Decne.	LC	
MAGNOLIOPSIDA	GENTIANALES	APOCYNACEAE	<i>Rhazya stricta</i>	Decne.	LC	
MAGNOLIOPSIDA	GENTIANALES	GENTIANACEAE	<i>Centaurium pulchellum</i>	(Sw.) Druce	DD	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Callipeltis cucullaris</i>	(L.) DC.	LC	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Galium aparine</i>	L.	DD	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Galium ceratopodum</i>	Boiss.	LC	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Galium setaceum</i>	Lam.	LC	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Galium tenuissimum</i>	M.Bieb.	DD	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Galium tricornutum</i>	Dandy	DD	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Kohautia caespitosa</i>	Schnizl.	LC	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Kohautia retrorsa</i>	(Boiss.) Bremek.	DD	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Plocama aucheri</i>	(Guill.) M.Backlund & Thulin	LC	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Plocama calycoptera</i>	(Decne.) M.Backlund & Thulin	DD	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Plocama hymenostephana</i>	(Jaub. & Spach) M.Backlund & Thulin	LC	
MAGNOLIOPSIDA	GENTIANALES	RUBIACEAE	<i>Valantia hispida</i>	L.	NT	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Erodium cicutarium</i>	(L.) L'Hér.	DD	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Erodium glaucophyllum</i>	(L.) L'Hér.	DD	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Erodium laciniatum</i>	(Cav.) Willd.	LC	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Erodium neuradifolium</i>	Delile ex Godr.	LC	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Geranium biuncinatum</i>	Kokwaro	LC	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Geranium mascatense</i>	Boiss.	LC	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Geranium trilophum</i>	Boiss.	LC	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Monsonia heliotropioides</i>	(Cav.) Boiss.	LC	
MAGNOLIOPSIDA	GERANIALES	GERANIACEAE	<i>Monsonia nivea</i>	(Decne.) Decne. ex Webb	LC	
MAGNOLIOPSIDA	LAMIALES	AVICENNIACEAE	<i>Avicennia marina</i>	(Forsk.) Vierh.	NT	B2ab(iii)
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Lallemantia royleana</i>	(Benth.) Benth.	DD	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Lavandula subnuda</i>	Benth.	LC	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Leucas inflata</i>	Benth.	LC	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Micromeria imbricata</i>	(Forssk.) C.Chr.	LC	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Salvia aegyptiaca</i>	L.	LC	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Salvia macilenta</i>	Boiss.	LC	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Salvia macrosiphon</i>	Boiss.	DD	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Salvia spinosa</i>	L.	DD	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Teucrium stocksianum</i>	Boiss.	LC	
MAGNOLIOPSIDA	LAMIALES	LAMIACEAE	<i>Ziziphora tenuior</i>	L.	DD	
MAGNOLIOPSIDA	LAMIALES	VERBENACEAE	<i>Phyla nodiflora</i>	(L.) Greene	LC	
MAGNOLIOPSIDA	LINALES	LINACEAE	<i>Linum corymbulosum</i>	Rchb.	LC	
MAGNOLIOPSIDA	MALPIGHALES	EUPHORBIACEAE	<i>Chrozophora oblongifolia</i>	(Delile) A.Juss. ex Spreng.	LC	

CLASS	ORDER	Family	Species Name	Authority	UAE National Status	UAE Red List Criteria
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Chrozophora plicata</i>	(Vahl) A.Juss. ex Spreng.	DD	
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Chrozophora tinctoria</i>	(L.) A.Juss.	DD	
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Euphorbia arabica</i>	Hochst. & Steud. ex T.Anderson	LC	
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Euphorbia granulata</i>	Forssk.	LC	
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Euphorbia helioscopia</i>	L.	LC	
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Euphorbia inaequilatera</i>	Sond.	DD	
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Euphorbia larica</i>	Boiss.	LC	
MAGNOLIOPSIDA	MALPIGHIALES	EUPHORBIACEAE	<i>Euphorbia peplus</i>	L.	LC	
MAGNOLIOPSIDA	MALPIGHIALES	MALPIGHIALEAE	<i>Acridocarpus orientalis</i>	A.Juss.	EN	D
MAGNOLIOPSIDA	MALPIGHIALES	PHYLLANTHACEAE	<i>Andrachne aspera</i>	Spreng.	LC	
MAGNOLIOPSIDA	MALPIGHIALES	PHYLLANTHACEAE	<i>Andrachne telephioides</i>	L.	DD	
MAGNOLIOPSIDA	MALPIGHIALES	SALICACEAE	<i>Salix acmophylla</i>	Boiss.	DD	
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Abutilon fruticosum</i>	Guill. & Perr.	EN	D
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Abutilon pannosum</i>	(G.Forst.) Schtdl.	LC	
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Corchorus depressus</i>	(L.) Stocks	NT	B1b(iii)
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Corchorus trilocularis</i>	L.	LC	
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Grewia erythraea</i>	Schweinf.	LC	
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Grewia tenax</i>	(Forssk.) Fiori	CR	B1ab(iii)+2ab(iii)
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Hibiscus micranthus</i>	L.f.	LC	
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Malva parviflora</i>	L.	LC	
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Melhanian muricata</i>	Balf.f.	EN	D
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Pavonia arabica</i>	Hochst. & Steud. ex Boiss.	CR	B1ab(iii)+2ab(iii); D
MAGNOLIOPSIDA	MALVALES	MALVACEAE	<i>Sida urens</i>	L.	LC	
MAGNOLIOPSIDA	MALVALES	NEURADACEAE	<i>Neurada procumbens</i>	L.	LC	
MAGNOLIOPSIDA	PIPERALES	ARISTOLOCHIALEAE	<i>Aristolochia bracteolata</i>	Lam.	DD	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago afra</i>	L.	LC	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago albicans</i>	L.	LC	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago amplexicaulis</i>	Cav.	LC	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago boissieri</i>	Hauskn. & Bornm.	LC	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago ciliata</i>	Desf.	LC	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago notata</i>	Lag.	DD	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago ovata</i>	Forssk.	LC	
MAGNOLIOPSIDA	PLANTAGINALES	PLANTAGINACEAE	<i>Plantago stocksii</i>	Boiss. ex Decne.	DD	
MAGNOLIOPSIDA	PLUMBAGINALES	PLUMBAGINACEAE	<i>Dyerophytum indicum</i>	(Gibson ex Wight) Kuntze	LC	
MAGNOLIOPSIDA	PLUMBAGINALES	PLUMBAGINACEAE	<i>Limonium axillare</i>	(Forssk.) Kuntze	VU	A3c; B1ab(i,ii,iii,iv,v)c(iii)
MAGNOLIOPSIDA	PLUMBAGINALES	PLUMBAGINACEAE	<i>Limonium carnosum</i>	(Boiss.) Kuntze	EN	B1ab(iii)
MAGNOLIOPSIDA	PLUMBAGINALES	PLUMBAGINACEAE	<i>Limonium stocksii</i>	(Boiss.) Kuntze	DD	
MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Calligonum crinitum</i>	Boiss.	LC	

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MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Calligonum polygonoides</i>	L.	LC	
MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Polygonum argyrocoleon</i>	Steud. ex Kunze	DD	
MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Pteropryum scoparium</i>	Jaub. & Spach	LC	
MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Rumex limoniastrum</i>	Jaub. & Spach	EN	B1ab(iii)+2ab(iii)
MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Rumex pictus</i>	Forssk.	LC	
MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Rumex spinosus</i>	L.	LC	
MAGNOLIOPSIDA	POLYGONALES	POLYGONACEAE	<i>Rumex vesicarius</i>	L.	LC	
MAGNOLIOPSIDA	PRIMULALES	PRIMULACEAE	<i>Lysimachia arvensis</i>	(L.) U.Manns & Anderb.	LC	
MAGNOLIOPSIDA	PRIMULALES	PRIMULACEAE	<i>Lysimachia linum-stellatum</i>	L.	LC	
MAGNOLIOPSIDA	RANUNCULALES	MENISPERMACEAE	<i>Cocculus pendulus</i>	(J.R.Forst. & G.Forst.) Diels	LC	
MAGNOLIOPSIDA	RANUNCULALES	PAPAVERACEAE	<i>Fumaria parviflora</i>	Lam.	LC	
MAGNOLIOPSIDA	RANUNCULALES	PAPAVERACEAE	<i>Papaver decaisnei</i>	Hochst. & Steud. ex Elkan	LC	
MAGNOLIOPSIDA	RANUNCULALES	PAPAVERACEAE	<i>Papaver dodecandrum</i>	(Forssk.) Medik.	DD	
MAGNOLIOPSIDA	RANUNCULALES	PAPAVERACEAE	<i>Papaver dubium</i>	L.	DD	
MAGNOLIOPSIDA	RANUNCULALES	PAPAVERACEAE	<i>Papaver refractum</i>	(DC.) K.-FGünther	DD	
MAGNOLIOPSIDA	RANUNCULALES	RANUNCULACEAE	<i>Adonis dentata</i>	Delile	EN	B1ab(iii)+2ab(iii)
MAGNOLIOPSIDA	RANUNCULALES	RANUNCULACEAE	<i>Ranunculus muricatus</i>	L.	DD	
MAGNOLIOPSIDA	ROSALES	MORACEAE	<i>Ficus johannis</i>	Boiss.	LC	
MAGNOLIOPSIDA	ROSALES	MORACEAE	<i>Ficus salicifolia</i>	Vahl	LC	
MAGNOLIOPSIDA	ROSALES	RHAMNACEAE	<i>Ziziphus spina-christi</i>	(L.) Desf.	LC	
MAGNOLIOPSIDA	ROSALES	ROSACEAE	<i>Prunus arabica</i>	(Olivier) Meikle	LC	
MAGNOLIOPSIDA	ROSALES	URTICACEAE	<i>Forsskaolea tenacissima</i>	L.	LC	
MAGNOLIOPSIDA	ROSALES	URTICACEAE	<i>Forsskaolea viridis</i>	Ehrenb. ex Desf.	LC	
MAGNOLIOPSIDA	ROSALES	URTICACEAE	<i>Parietaria alsinifolia</i>	Delile	LC	
MAGNOLIOPSIDA	SAPINDALES	RUTACEAE	<i>Haplophyllum tuberculatum</i>	(Forssk.) A.Juss.	LC	
MAGNOLIOPSIDA	SAPINDALES	SAPINDACEAE	<i>Dodonaea viscosa</i>	Jacq.	LC	
MAGNOLIOPSIDA	SAXIFRAGALES	CRASSULACEAE	<i>Crassula alata</i>	(Viv.) A.Berger	DD	
MAGNOLIOPSIDA	SAXIFRAGALES	CRASSULACEAE	<i>Rosularia adenotricha</i>	(Wall. ex Edgew.) C.-A.Jansson	NT	
MAGNOLIOPSIDA	SAXIFRAGALES	CRASSULACEAE	<i>Sedum hispanicum</i>	L.	LC	
MAGNOLIOPSIDA	SAXIFRAGALES	CRASSULACEAE	<i>Umbilicus horizontalis</i>	(Guss.) DC.	LC	
MAGNOLIOPSIDA	SAXIFRAGALES	CYNOMORIACEAE	<i>Cynomorium coccineum</i>	L.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	ACANTHACEAE	<i>Blepharis ciliaris</i>	(L.) B.L.Burtt	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	ACANTHACEAE	<i>Justicia heterocarpa</i>	T.Anderson	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	OLEACEAE	<i>Olea europaea</i>	L.	VU	D1
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Anticharis arabica</i>	Endl.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Anticharis glandulosa</i>	Asch.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Bacopa monnieri</i>	(L.) Wettst.	LC	

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MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Chaenorhinum rubrifolium</i>	(Robert & Castagne ex DC.) Fourr.	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Cistanche phelypaea</i>	(L.) Cout.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Cistanche tubulosa</i>	(Schenk) Wight ex Hook.f.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Kickxia elatine</i>	(L.) Dumort.	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Kickxia floribunda</i>	(Boiss.) Täckh. & Boulos	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Linaria simplex</i>	Desf.	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Linaria tenuis</i>	(Viv.) Spreng.	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Lindenbergia arabica</i>	(S.Moore) Hartl	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Lindenbergia indica</i>	(L.) Vatke	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Misopates orontium</i>	(L.) Raf.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Nanorrhinum hastatum</i>	(R.Br. ex Benth.) Ghebr.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Nanorrhinum ramosissimum</i>	(Wall.) Betsche	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Orobanche aegyptiaca</i>	Pers.	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Orobanche cernua</i>	Loefl.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Schweinfurthia imbricata</i>	A.G.Mill, M.Short & D.A.Sutton	EN	D
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Schweinfurthia papilionacea</i>	(L.) Boiss.	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Scrophularia arguta</i>	Aiton	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Scrophularia deserti</i>	Delile	LC	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Verbascum akdareense</i>	(Murb.) Hub.–Mor.	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Verbascum omanense</i>	Hub.–Mor.	DD	
MAGNOLIOPSIDA	SCROPHULARIALES	SCROPHULARIACEAE	<i>Verbascum sinaiticum</i>	Benth.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus acanthocladus</i>	Boiss. & Kotschy	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus arvensis</i>	L.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus cephalopodus</i>	Boiss.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus glomeratus</i>	Choisy	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus pilosellifolius</i>	Desr.	DD	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus prostratus</i>	Forssk.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus uliginus</i>	Boiss.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Convolvulus virgatus</i>	Boiss.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Cressa cretica</i>	L.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Cuscuta planiflora</i>	Ten.	LC	
MAGNOLIOPSIDA	SOLANALES	CONVOLVULACEAE	<i>Seddera latifolia</i>	Hochst. & Steud.	DD	
MAGNOLIOPSIDA	SOLANALES	SOLANACEAE	<i>Hyoscyamus muticus</i>	L.	LC	
MAGNOLIOPSIDA	SOLANALES	SOLANACEAE	<i>Lycium shawii</i>	Roem. & Schult.	LC	
MAGNOLIOPSIDA	SOLANALES	SOLANACEAE	<i>Solanum incanum</i>	L.	LC	
MAGNOLIOPSIDA	SOLANALES	SOLANACEAE	<i>Solanum nigrum</i>	L.	LC	
MAGNOLIOPSIDA	SOLANALES	SOLANACEAE	<i>Solanum villosum</i>	Mill.	DD	
MAGNOLIOPSIDA	SOLANALES	SOLANACEAE	<i>Solanum virginianum</i>	L.	LC	

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MAGNOLIOPSIDA	SOLANALES	SOLANACEAE	<i>Withania somnifera</i>	(L.) Dunal	DD	
MAGNOLIOPSIDA	VIOLALES	CISTACEAE	<i>Helianthemum kahircum</i>	Delile	DD	
MAGNOLIOPSIDA	VIOLALES	CISTACEAE	<i>Helianthemum lippii</i>	(L.) Dum.Cours.	LC	
MAGNOLIOPSIDA	VIOLALES	CISTACEAE	<i>Helianthemum salicifolium</i>	(L.) Mill.	LC	
MAGNOLIOPSIDA	VIOLALES	FRANKENIACEAE	<i>Frankenia pulverulenta</i>	L.	LC	
MAGNOLIOPSIDA	VIOLALES	TAMARICACEAE	<i>Tamarix aphylla</i>	(L.) H.Karst.	DD	
MAGNOLIOPSIDA	VIOLALES	TAMARICACEAE	<i>Tamarix arabica</i>	Bunge	DD	
MAGNOLIOPSIDA	VIOLALES	TAMARICACEAE	<i>Tamarix nilotica</i>	(Ehrenb.) Bunge	LC	
MAGNOLIOPSIDA	VIOLALES	TAMARICACEAE	<i>Tamarix passerinoides</i>	Desv.	DD	
MAGNOLIOPSIDA	VIOLALES	TAMARICACEAE	<i>Tamarix pycnocarpa</i>	DC.	DD	
MAGNOLIOPSIDA	VIOLALES	VIOLACEAE	<i>Viola cinerea</i>	Boiss.	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Fagonia bruguieri</i>	DC.	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Fagonia indica</i>	Burm.f.	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Fagonia ovalifolia</i>	Hadidi	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Fagonia paulayana</i>	J.Wagner & Vierh.	DD	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Seetzenia lanata</i>	(Willd.) Bullock	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tetraena alba</i>	(L.f.) Beier & Thulin	DD	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tetraena coccinea</i>	(L.) Beier & Thulin	DD	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tetraena hamiensis</i>	(Schweinf.) Beier & Thulin	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tetraena qatarensis</i>	(Hadidi) Beier & Thulin	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tetraena simplex</i>	(L.) Beier & Thulin	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tribulus arabicus</i>	Hosni	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tribulus bimucronatus</i>	Viv.	DD	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tribulus macropterus</i>	Boiss.	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tribulus megistopterus</i>	Kralik	DD	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tribulus pentandrus</i>	Forssk.	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Tribulus terrestris</i>	L.	LC	
MAGNOLIOPSIDA	ZYGOPHYLLALES	ZYGOPHYLLACEAE	<i>Zygophyllum propinquum</i>	Decne.	DD	
POLYPODIOPSIDA	OPHIOGLOSSALES	OPHIOGLOSSACEAE	<i>Ophioglossum polyphyllum</i>	A.Braun	NT	B1b(iii)
POLYPODIOPSIDA	POLYPODIALES	ASPLENIACEAE	<i>Asplenium ceterach</i>	L.	DD	
POLYPODIOPSIDA	POLYPODIALES	PTERIDACEAE	<i>Actiniopteris semiffabellata</i>	Pic.Serm.	DD	
POLYPODIOPSIDA	POLYPODIALES	PTERIDACEAE	<i>Adiantum capillus-veneris</i>	L.	LC	
POLYPODIOPSIDA	POLYPODIALES	PTERIDACEAE	<i>Allosorus acrosticus</i>	(Balb.) Christenh.	LC	
POLYPODIOPSIDA	POLYPODIALES	PTERIDACEAE	<i>Cosentinia vellea</i>	(Aiton) Tod.	LC	
POLYPODIOPSIDA	POLYPODIALES	PTERIDACEAE	<i>Onychium divaricatum</i>	(Poir.) Alston	LC	

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For further information or feedback:

Ministry of Climate Change & Environment

PO Box 1509, Dubai, United Arab Emirates

Email: info@moccae.gov.ae



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