THE ABU DHABI RED LIST OF SPECIES

An assessment of the conservation status of mammals, birds, reptiles, invertebrates and plants in Abu Dhabi Emirate.

هـيـئـة الـبـيـئـة - أبـوظـبـي
Environment Agency - ABU DHABI

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Environment Agency - ABU DHABI

The Environment Agency - Abu Dhabi (EAD) is a governmental agency that was established in 1996 with the overall function of protecting and conserving the environment as well as promoting sustainable development in the Emirate of Abu Dhabi, the capital of the United Arab Emirates (UAE). The Agency is responsible for assisting the UAE Ministry of Climate Change and Environment in implementing environmental laws and meeting the country's obligations under various international conventions and agreements.

The IUCN Species Survival Commission and the IUCN Global Species Program have enjoyed a close working relationship with Abu Dhabi for the last 20 years, particularly on issues such as species conservation and re-introductions, as well as Red List assessment and training. EAD has been long time supporter of the SSC Re-introduction Specialist Group and hosted the meeting of the SSC Leadership in 2008, 2012, 2015 and 2019.

هـيـئـة الـبـيـئـة - أبـوظـبـي
Environment Agency - ABU DHABI

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Founded in 1987, Provita is a Venezuelan non-profit, non-governmental organisation whose mission is to develop innovative socio-environmental solutions for nature conservation. Provita focusses on three areas of work: research, to understand the status and threats to biodiversity; education, to make people part of the solutions; and conservation actions, to directly save species and ecosystems.

IUCN

SSC
Species Survival Commission

PROVITA

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Foreword

H.E. DR SHAIKHA SALEM AL DHAHERI
Secretary General,
Environment Agency – Abu Dhabi

The Emirate of Abu Dhabi is biologically rich, despite the fact that much of the land area is vast expanse of desert. The emirate takes pride in the natural heritage it has and has taken extra efforts to ensure that it is well protected and continues to provide valuable services, as well as remain an integral part of Abu Dhabi's cultural heritage.

The Environment Agency - Abu Dhabi, since its establishment in 1996, has continuously strived to protect endangered species and habitats through a suite of initiatives, which includes establishment of protected areas. Species and habitat specific research and monitoring programmes have provided valuable data on their status and trend. Today we boast of a large population of Dugong, the second largest in the world in the Arabian Gulf, the largest population of the Indian Ocean Humpback Dolphin and the only breeding colony of the Greater Flamingo in the Arabian Gulf.

However, biodiversity in the emirate faces some unique challenges, especially from the rapid pace of development. Abu Dhabi has seen an unprecedented growth, both in the population and associated infrastructure in the past three decades. This has put enormous pressure on biodiversity, as a direct result of development as well as from pollution and invasive species proliferation.

Fortunately, Abu Dhabi has also undertaken series of initiatives to protect biodiversity and habitats. We currently have a network of 19 protected areas under the Sheikh Zayed Protected Areas Network covering over 30% of our land and sea areas. Our long-term research and monitoring programmes provide vital knowledge on the status and trends of important terrestrial and marine species. Such long-term data are key to understand trends in populations and take corrective actions. We have made best use of such data collected over the 25 years of our existence as an input to this red listing process, the outcome of which is the first red list of species for Abu Dhabi Emirate.

The publication of the Abu Dhabi Red List of Species which has been over due is not only needed but timely. The Red List would help us identify and develop priority conservation actions for species which are threatened, but would also provide critical inputs to the next five year strategy 2021-2025 and also in the permitting process. I congratulate the team for working and producing this Red List which would go a long way in improving the conservation status of some of our most threatened species.

Summary

The development of the Abu Dhabi Red List of Species (AD-RLS) is an outcome of a workshop held in 2018 to provide first hand training to EAD staff during a five-day period. The training sessions were conducted by four staff from Provita, one from IUCN Species Survival Commission and one from the Red List Unit in Cambridge. The training provided opportunity to EAD staff to interact with assessors and understand the process of species assessments in order to assess the taxa in their areas of specialisation.

Categories	CR Critically Endangered	EN Endangered	VU Vulnerable	NT Near Threatened	LC Least Concern	DD Data Deficient	Grand Total
Plants	8	11	4	19	46	13	**101**
Birds	10	10	13	11	5	0	**49**
Terrestrial Mammals	3	2	3	0	5	19	**32**
Marine Species	0	2	2	0	1	4	**9**
Invertebrates	1	1	2	2	9	10	**25**
Reptiles	1	0	1	0	23	1	**26**
Amphibians	0	0	0	0	2	0	**2**
TOTAL	23	26	25	32	91	47	**244**

The local assessment of the Red List of Abu Dhabi, is one of the few such attempts in the region, where local Red Lists have been developed. Post-training workshop, the team identified a tentative list of 327 species which included 95 plants, 75 birds, 9 marine species, 30 terrestrial mammals, 18 terrestrial reptile and 100 invertebrates. Of these the team assessed 244 species which included 101 plants, 49 birds, 9 marine species, 32 terrestrial mammals, 25 invertebrates, 26 reptiles and two amphibians.

Of the 244 species assessed, 74 are under threat categories (species listed as critically endangered, endangered or vulnerable) in Abu Dhabi.

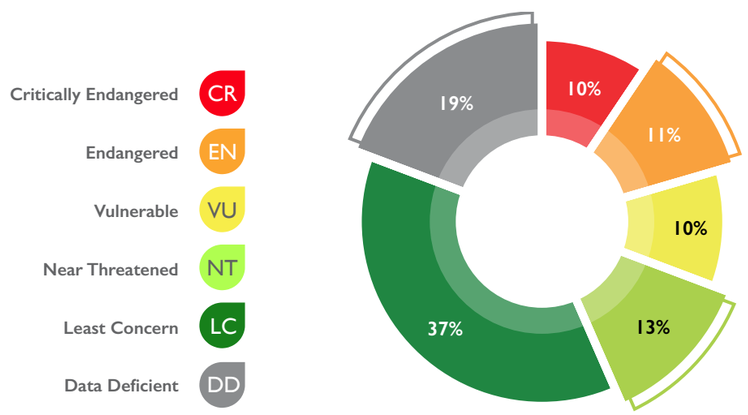


Figure 1: Percentage of total species assessed using IUCN category.

The assessment of the selected taxa of Abu Dhabi Emirate was skewed towards terrestrial species and only nine key marine vertebrate species were assessed, including Dugongs *(Dugong dugon),* marine turtles *(Chelonia mydas, Eretmochelys imbricata)* and dolphins *(Tursiops aduncus, Sousa plumbea)*. Several of the bird species assessed also could be considered partly marine as they use coastal and marine habitats. Of the 74 threatened species 32% were coastal, marine or wetland dependent or wetland obligates and the remaining 67% terrestrial. Fortunately, for many of the threatened species there are existing conservation actions underway, such as monitoring of dugongs, turtles, dolphins and their habitats. Similarly long-term monitoring and conservation actions are also underway for many species of threatened birds such as Egyptian Vulture *(Neophron percnopterus),* Socotra Cormorant *(Phalacrocorax nigrogularis)*, Crab Plover *(Dromas ardeola)* and Sooty Falcon *(Falco concolor)*. Plans are in place for rehabilitation for some of the threatened plant species such as White Saxaul *(Haloxylon persicum)* and Dwarf Palm *(Nannorrhops ritchieana)*. Conservation programmes on terrestrial mammals such as Arabian Oryx *(Oryx leucoryx),* Sand Cat *(Felis margarita thinobia)* and Arabian Tahr *(Arabitragus jayakari)* are in place. Regular monitoring of invertebrates in the emirate has led to the discovery of many new species to science.

Although significant progress has been made towards understanding conservation status of some key species, the current red list of threatened species would lead to conservation actions for species which have not been part of conservation actions and also help in redefining conservation priorities for species which have been subjected to some research and assessment already. The publication of this list would further help EAD as it is in the process of developing a new five-year strategy (2021-2025). The Abu Dhabi Red List of species would be a key input in development planning processes, especially when this list is integrated with the Red List of Ecosystems and the new habitat map, likely to be ready by mid 2021.

Figure 2: Long-legged bazzard (*Buteo rufinus*)

1.0

Introduction

Salim Javed & Shaikha Salem Al Dhaheri

1.1 Abu Dhabi's Biological Diversity

The emirate is blessed with rich diversity of habitats within a relatively small and harsh arid environment. EAD has identified 12 critical habitats and 8 environmentally sensitive habitats within Abu Dhabi Emirate (Al Dhaheri *et.al* 2017).

These habitats and their sub-habitats within, are largely responsible for species richness and diversity in the emirate. Coastal habitats and the series of islands, as well as the mainland, are home to a large number of resident and migratory species. Many offshore islands have colonies of breeding terns and gulls, some of which are nationally and regionally important (Javed, 2003).

Abu Dhabi has recorded nearly 3,800 species, including 436 plants, 51 mammals, 427 birds, 56 reptiles and amphibians, and 2312 invertebrates (EAD, 2017).

Figure 1.1.1: Saunder's Tern, one of the breeding birds on the off shore islands of Abu Dhabi.

Of the 51 mammals (including terrestrial and marine) species such as Dugong (*Dugong dugon*), Indian Ocean Humpback Dolphin *(Sousa plumbea)*, Arabian Gazelle *(Gazella arabica),* Arabian Sand Gazelle *(Gazella marica),* Arabian Tahr (*Arabitragus jayakari*), Arabian Oryx *(Oryx leucoryx),* Blanford's Fox *(Vulpes cana),* and Sind Serotine Bat *(Eptesicus nasutus)* are listed as threatened by the IUCN. Several other species such as the Rüppell's Fox *(Vulpes rueppellii),* the Sand Cat *(Felis margarita thinobia)* and Caracal *(Caracal caracal)* have local conservation significance.

A total of 54 terrestrial reptile species have been recorded in the UAE (Leviton *et al.,* 1992, Soorae *et al.,* 2011; Jongbloed, 2000 and Baha El Din, 1986). The only two amphibians known in the UAE are the Arabian Toad *(Sclerophrys arabica)* and the Dhofar Toad *(Duttaphrynus dhufarensis),* and neither of them is listed as threatened.

Figure 1.1.2: Green Turtle (*Chelonia mydas*)

UAE is home to the second largest population of Dugongs in the world with nearly 3,000 individuals, many of which reside in the waters of the emirate (EAD, 2017). On land, the Arabian Oryx Protected Area supports the largest concentration of Arabian Oryx in the UAE, with more than 850 individuals. Areas such as Jabal Hafit and Al Houbara Protected area are home to some of the most endangered species such as Arabian Tahr, Egyptian Vulture *(Neophron percnopterus)* and Asian Houbara *(Chlamydotis macqueenii).*

The emirate has made significant efforts to ensure protection of these threatened species and their habitats. In 2017, through an Emiree Decree, 19 protected areas (13 terrestrial & 6 marine) were established, covering approximately 29% of the total land and sea areas of the emirate (EAD, 2017), which now stands at over 30% following the expansion of the Al Houbara Protected area. The emirate's Al Wathba Wetland Reserve and Bul Syayeef Marine Protected have been designated as Ramsar sites. In Marawah Marine Biosphere Reserve (MMBR), the emirate has the only such reserve in the country, which supports important habitats such as seagrasses, mangroves, coral reefs and coastal sabkhas, as well as a suite of distinctive species such as dugong, turtles and a variety of shorebirds. The MMBR also is of significant cultural and archaeological importance with more than 20 fossil and archeological sites, dating back to the 16th century.

The emirate has 19 of the 30 Important Bird Areas (IBAs) in the UAE (Evans, 1994; Javed & Khan, 2003; BLI, 2019). The island of Jarnein alone supports over 50,000 breeding terns every summer and is home to breeding colonies of Sooty Gull *(Ichthyaetus hemprichii),* White-cheeked Tern *(Sterna repressa),* and Bridled Tern *(Onychoprion anaethetus),* some of which are regionally important. It is also recognised as a Gift to the Earth by WWF. The globally threatened Socotra Cormorant *(Phalacrocorax nigrogularis)* has all but one breeding colony in the emirate, the only other being on Siniya island in Umm Al Qaiwain. Abu Dhabi and its offshore islands are important breeding grounds for the endangered and breeding Hawksbill Turtles *(Eretmochelys imbricata)* while Marine Protected Areas also provide safe foraging grounds to Green Turtles *(Chelonia mydas).* The southwestern waters are considered as Ecologically and Biologically Significant Marine Areas (EBSAs) and are an indicator of the importance of Abu Dhabi for biodiversity locally and internationally.

1.2 Current Conservation Measures

The emirate is fully committed to safeguard important species and habitats in protected areas, however, designation alone does not guarantee effective protection and management.

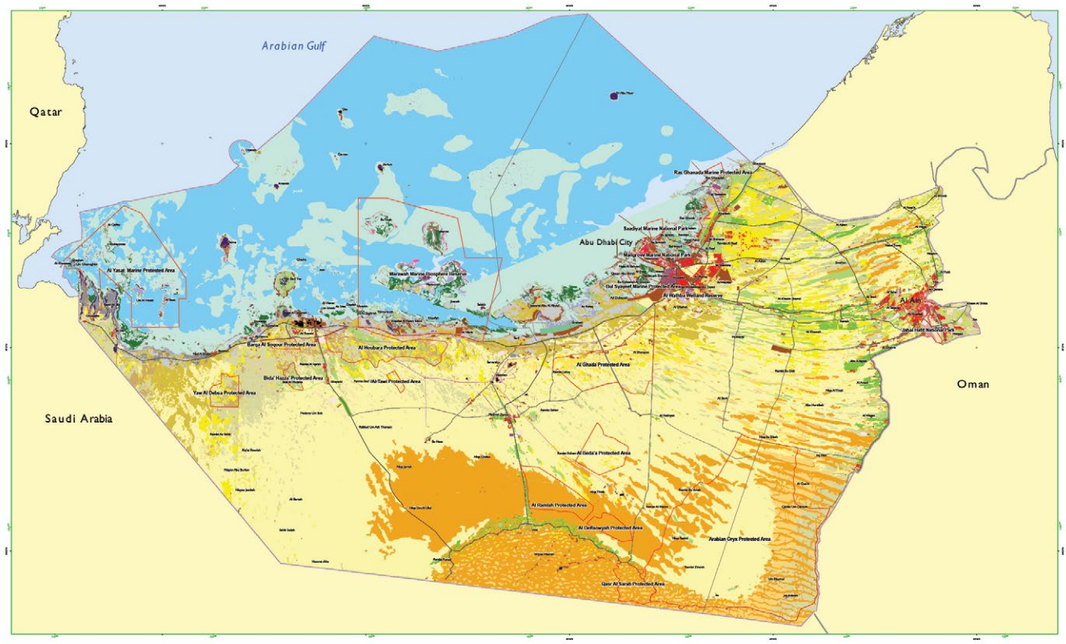
EAD, on behalf of the government of Abu Dhabi, undertakes systematic and regular monitoring of priority species and their habitats. Regular monitoring aided with effective management has ensured, not only long-term population data, but also more effective management of the species. Use of satellite tracking, geolocation, remote camera traps, aerial surveys and drones has ensured that the data collected are quick, accurate and extensive.

Stable population of Dugongs, Hawksbill and Green Turtles, as well as many breeding terns, are direct results of long-term monitoring and effective management. Use of cutting edge technologies have helped the emirate in discovering many species after a gap of several years such as Caracal, Indian Crested Porcupine *(Hystrix indica)*, and Sand Cat, to name a few. Our monitoring of invertebrate fauna has led to the discovery of at least six species new to science, as well as several species new to the UAE (Saji *et al.,* 2019).

Figure 1.1.3: Digger wasp (*Ammatomus wathabensis*), a species which is new to science, recorded from Al Wathba Wetland Reserve in Abu Dhabi.

EAD has undertaken extensive work on the habitats and their status in the emirate. The work of Abu Dhabi Global Environmental Data Initiative (AGEDI) through Local, National, Regional Biodiversity Assessment Projects stands out, under which habitats and their protection levels were mapped (AGEDI, 2013). This was followed by another extensive habitat mapping project covering approximately 60,000 km² of land and 30,000 km² of sea, at a scale of 1:10,000, identifying 41 terrestrial and 13 marine habitats (Figure 1.1.4). This subsequently led to the identification of 12 critical and 8 sensitive marine and terrestrial habitat in the emirate, published as Habitat Classification Guidelines (Dhaheri *et al.,* 2017), and made widely available to project proponents and developers.

Abu Dhabi Emirate Terrestrial and Marine Habitats



LEGEND

- 1010- Mudflats and sand exposed at low tide
- 1020- Sheltered tidal flats with cyanobacterial mats
- 1030- Saltmarsh
- 1040- Mangroves
- 1050- Storm beach ridges
- 1060- Sandy beaches
- 1070- Beach rock and gravelly beaches
- 2011- Coastal plains on well-drained sandy ground
- 2012- Coastal plains on well-drained rocky or gravelly terrain
- 2020- Coastal sand sheets and low dunes
- 2030- Coastal cliffs, headlands, rocky slopes and wadis in coastal situations
- 3100- Coastal sabkha, including sabkha matti
- 4110- Sand sheets and dunes with tree cover
- 4120- Sand sheets and dunes with shrub cover
- 4130- Sand sheets and dunes with dwarf shrub cover
- 4140- Sand sheets and dunes with perennial herbs and graminoids
- 4200- Mega-dunes
- 5110- Gravel plains with distinct tree vegetation
- 5120- Gravel plains with dwarf shrub vegetation
- 5130- Gravel plains with sparse vegetation
- 5200- Inland sabkha
- 6100- Mountain slopes, scree and associated wadis
- 6210- Jebels (including mesas and burqas)
- 6220- Escarpments, lithified sand dunes, rocky exposures
- 6320- Wadis in open terrain, and drainage channels
- 7100- Semi-artificial lakes
- 7200- Moist ground with Phragmites, Tamarix and grass mats
- 8100- Date plantations
- 8200- Farmland
- 8300- Livestock areas
- 8400- Forestry plantations
- 9110- High density urban
- 9120- Low density urban
- 9210- Oil industry
- 9220- Airports and aerodromes
- 9230- Port areas
- 9240- Other industry
- 9300- Leisure areas
- 9400- Paved roads
- 9500- Pipelines infrastructure
- 9600- Disturbed ground
- 11100- Fringing reef
- 11200- Patch reef
- 11110- Fringing reef with macroalgae
- 11210- Patch reef with macroalgae
- 12000- Seagrass bed
- 13000- Hard-bottom
- 13010- Hard-bottom with macroalgae
- 14000- Unconsolidated bottom
- 15100- Rock armouring / artificial reef
- 15200- Marine structure
- 16100- Dredged seabed
- 16200- Dredged area wall
- 17000- Deep sub-tidal seabed

BASE MAP LEGEND

- Road - Dual Carriageway
- Road - Single Carriageway
- Municipality Boundary
- Abu Dhabi Emirate Boundary
- International Boundary
- Protected Area

NOTE: Number refers to habitat code. Text refers to habitat name.

Figure 1.1.4: Abu Dhabi Emirate Terrestrial and Marine Habitats

1.3 Challenges in Protection of Abu Dhabi Species & Ecosystems

The emirate faces many challenges to protect its rich and unique biodiversity.

Rapid industrial and urban development to meet the growing demands for an ever increasing population and other economic developments, are the biggest drivers which have impacted species and their habitats. Additionally, forces such as periodic droughts, climate change and invasive species, further pose significant challenges to the long-term conservation of many important and threatened species and habitats.

Diverting development, especially in and around some unique habitats, such as the mountain areas of Jabal Hafit, much of the coastline and some offshore islands, still remains the biggest challenge in Abu Dhabi.

Although the emirate has invested heavily in understanding the extent of habitats by mapping them and setting an ambitious target to protect 90% of all habitats, the pressure from development projects remains unabated.

There is reasonably good understanding of the status and distribution of many species of several taxa, however, a Red List has been lacking, not only in the emirate, but also in the UAE until recently. Development of a local or a regional red list is not only fundamental to our understanding of threat levels faced by species, but is also a powerful tool for conservation planning. The IUCN Species Survival Commission (SSC) frames all of the work of its specialist network on the Species Conservation Cycle, that includes three major stages: Assessment, Planning and Action. Evaluating species for the Red List contributes to the first stage, providing the necessary data for prioritising actions and interventions in species conservation plans. Ultimately, the purpose of this work is to improve the status of threatened species by guiding and catalysing conservation action.

1.4 Need for a Local Red List Assessment

The primary motivation for initiation of the Abu Dhabi red list process was indeed the lack of such a valuable tool, further bolstered by the fact that the emirate constitutes more than 80% of the total land area of the UAE, with a high proportion of unique and important biodiversity contained within its borders.

Thus, the development of local red list for Abu Dhabi was recognised not only essential, but also critical for two reasons. First, it would fulfil the long-standing gap in our understanding of locally threatened species and our ability to prioritise conservation actions. Second, it would also complement the national red lists have been developed for some taxa.

In addition, Abu Dhabi has outlined actions to protect biodiversity in the emirate and has set an ambitious target of protecting 90% of all habitats as protected. Charismatic and important species have been used as proxy for the conservation of habitats, however, effective conservation planning is only possible through drawing up a list of most important and critical species and habitats for conservation. This is also clearly outlined in the EAD strategy 2015-2020, where development and implementation of conservation action plans for key species and habitats was identified as some of the performance indicators (KPI) for measuring the success.

Although the global IUCN Red List shows only around 2% of all known species recorded in Abu Dhabi as threatened, this may be an under estimation, given that this status is determined on the basis of the global distribution of the species present in the emirate. To determine local status, one must assess threats to resident populations, and consider both local and global assessments to direct conservation effort on most threatened species.

2.0

Background to the Red Listing

Salim Javed, Jon Paul Rodriguez, Ariany Garcia-Rawlins & Shaikha Salem Al Dhaheri

2.1 Current State of Red Listing in the Region

No national red list of species existed in the UAE when this process started in 2018.

There were however, initial attempts by Hornby (1996a) and Tourenq *et al.* (2005) for mammals, and Hornby & Aspinall (1999) for birds, to identify important and threatened species. These publications, however, lacked adequate application of the IUCN criteria or support by IUCN in general, and did not have the rigorous scrutiny and appeal of the IUCN process.

Over the past several years, and driven by the Annual Sharjah Biodiversity Workshops, several regional Red Lists on specific taxa have been prepared (Table 2.1.1). Examples include Freshwater species (Garcia *et. al.,* 2008), Carnivores (Mallon *et al.,* 2011), Reptiles (Cox *et al.,* 2012) and Birds of the Arabian Peninsula (Symes *et al.,* 2014) undertaken at the workshop and jointly produced by IUCN, Environment and Protected Areas Authority (EPA), Sharjah and Environment Agency - Abu Dhabi.

In 2017, EAD conducted a workshop on 'Sharks, Rays and Chimera's of the Arabian Sea and Adjacent Waters' where 174 species were assessed, of which roughly 50% were categorised as threatened (Jabado *et al.,* 2017). The Arab Regional Centre in Bahrain recently published another local assessment for Bahrain (ARC, 2017).

Figure 2.1.1 Sand cat (*Felis margarita thinobia*)

Year	Taxa	Species assessed	Number of species threatened	Type	Region	Conducted by	Citation
1999	Birds	25	NA	Local Assessment	Abu Dhabi	Papers	Hornby, R., and Aspinall, S., 1999. Red Data List for the birds of the United Arab Emirates. Sandgrouse 19 (2): 102-110 1997
2005	Mammals	44	11	Local Assessment	Abu Dhabi	IUCN RLA, Sharjah Breeding Centre	Tourenq, C., and Drew, C. 2005. The Red List of terrestrial mammalian species of the Abu Dhabi Emirate.
2008	Freshwater Biodiversity	292	51	Regional Assessment	Arabian Peninsula	IUCN RLA, Sharjah Breeding Centre	Garcia, N., Harrison, I., Cox, N., and Tognelli, M.F. (compilers). (2015). The Status and Distribution of Freshwater Biodiversity in the Arabian Peninsula. Gland, Switzerland, Cambridget, UK and Arlington, USA.
2011	Carnivores	16	4	Regional Assessment	Arabian Peninsula	IUCN RLA, Sharjah Breeding Centre	Mallon, D. and Budd, K. (eds). (2011). Regional Red List Status of Carnivores in the Arabian Peninsula. Cambridge, UK and Gland Switzerland: IUCN, and Sharjah, UAE: Environment and Protected Areas Authority vi+49pp.
2012	Reptiles	172	6	Regional Assessment	Arabian Peninsula	IUCN RLA, Sharjah Breeding Centre	Cox, N.A., Mallon, D., Bowles, P., Els, J., and Tognelli, M.F. (Compilers). (2012). The Conservation Status and Distribution of Reptiles of the Arabian Peninsula. Cambridge. UK and Gland, Switzerland: IUCN, and Sharjah, UAE: Environment and Protected Areas Authority.
2015	Birds	329	49	Regional Assessment	Arabian Peninsula	IUCN RLA, Sharjah Breeding Centre	Symes, A., Taylor, J., Mallon, D., Porter, R., Simms, C. and Budd, K. (2015). The Conservation Status and Distribution of the Breeding Birds of the Arabian Peninsula. Cambridge, UK and Gland, Switzerland: IUCN, and Sharjah, UAE: Environment and Protected Areas Authority.
2017	Sharks, Rays, Chimeras	153	39+39	Regional Assessment	Arabian Peninsula & Adjacent Waters	EAD & IUCN Sharks Specialist Group	Jabado, R.W., Kyne, P.M., Pollom, R.A., Ebert, D.A.,Simpfendorfer, C.A., Ralph, G.M., and Dulvy, N.K. (eds.) 2017. The Conservation Status of Sharks, Rays and Chimeras in the Arabian Sea and Adjacent Waters. Environment Agency - Abu Dhabi, UAE and IUCN Species Survival Commission Shark Specialist Group, Vancouver, Canada 236 pp/
2017	All taxa	23	16	Local Assessment	Bahrain	ARC for World Heritage	Anonymous (2017). The First Regional Red List Assessment of Selected Species in the Kingdom of Bahrain. Arab Regional Centre for World Heritage. Manama, Kingdom of Bahrain
2019	Mammals, Birds, Reptiles, Invertebrates and Plants.	244	76	Local Assessment	Abu Dhabi	EAD, Provita, IUCN	Javed *et al.* (2020) The Abu Dhabi Red List of species: An assessment of the conservation status of mammals, birds, reptiles, invertebrates and plants in Abu Dhabi Emirate.

Table 2.1.1 Local and Regional assessments for the Red List of Species in the Arabian Peninsula

2.2 The Red Listing Process

The history of red lists and red books, which are catalogs that summarise information on threatened species, begun over 50 years ago (Hilton-Taylor, 2014). The IUCN Red List of Threatened Species (IUCN, 2019) is the primary source of evidence of the magnitude of the global extinction crisis.

In parallel, national red lists continue to proliferate. Only in Europe, at least 3,562 current and past red lists are known (Köppel *et al.,* 2003), while at least 108 countries, more than half of all nations, have produced 498 national red lists on at least one taxonomic group, 56% of them since 2005 (NRLWG, 2015).

The primary uses of red lists include: 1) increase knowledge available to the public on the status of threatened species, 2) provide a reference point to document change in the conservation status of plants, fungi and animals, 3) help identify sites contributing significantly to the global persistence of biodiversity, as well as sites to be included in national protected areas networks, 4) monitor human activities that drive biodiversity loss, 5) document progress toward national commitments established in convention or other national or international agreements, and 6) inform investments of limited resources on priority conservation actions (Collar, 1996; Rodríguez *et al.,* 2004; Vié *et al.,* 2009; Smart *et al.,* 2014).

In 2001, IUCN adopted a series of standardised extinction risk categories (see Section 3), based on quantitative and qualitative criteria, to classify species on red lists in a transparent and objective way, following decades of fairly subjective risk assessments (IUCN, 2012a). Additionally, the current system clearly separates the scientific process of determining extinction risk, from the socio-environmental process of defining conservation priorities (Rodríguez *et al.,* 2004; Miller *et al.,* 2006, 2007).

It is not always feasible to assign the same category that a species has globally to its regional sub-populations, such as the ones located in a group of countries, a particular nation, or one of its provinces. To perform evaluations at these sub-global levels, one must consider additional factors, as the distribution of species generally do not coincide with geopolitical borders, there is sometimes migration of non-reproductive individuals between neighbouring populations, or populations in a region are non-native. For these cases, IUCN (2012b) developed a set of Guidelines for Application of IUCN Red List Criteria at Regional and National Levels, that follow a three-step process.

First, one must clearly identify the regional population to be evaluated. For example, it may be a population defined by a political boundary, such as a country or a state. It could also be a watershed, or if it is an aquatic animal, a stretch of a river. In any case, what is important is that the delimitation is clearly defined.

The second step is to apply the IUCN Red List Categories and Criteria (IUCN, 2012a) to the regional population, as if it was the global population of the species, to determine the preliminary estimate of extinction risk within the region. The reason why this risk estimate is not definitive, is because regional populations are typically a fraction of the global population, and regularly exchange individuals with other sub-populations. Therefore, it is possible that the extinction risk of the regional population is influenced by what occurs elsewhere. If the regional population frequently receives migrants from other sub-populations of the same species, its extinction risk would be lower to the preliminary estimate, as, if it were to go extinct, it would be easily recolonised. If, in contrast, the regional population is a net exporter of individuals to the global population, extinction risk could be higher than indicated by application of the global criteria.

The final step is, therefore, adjustment of the category: in the first example (when extinction risk of the regional population is lower) the guidelines recommend down-listing by one (or more) categories the initial estimate of extinction risk, while in the second example (when extinction risk of the regional population is higher) up-listing is recommended. In all cases, however, the assessors must clearly justify the adjustment (IUCN, 2012b).

Figure 2.2.1: Experts participation at the species assessment workshop organised by EAD, Provita and IUCN.

2.3 Initial Training and Planning Workshop

In February, 2018, EAD, Provita and IUCN organised a five-day workshop with three objectives:

1) To train EAD experts in the IUCN Red Listing process, especially assessments at the local level,

2) Familiarise staff with other IUCN knowledge products such as the Red List of Ecosystems and Key Biodiversity Areas, and;

3) Plan the following steps, leading to the publication of the first Abu Dhabi Red List of Species, and initiation of ecosystem red list assessments in the emirate.

The first two days focused on the IUCN Red List of Threatened Species, the assessment process, the criteria, applications at the regional and national level, examples and case studies. Days three and four were structured similarly, but on the IUCN Red List of Ecosystems, while the final day was devoted to presenting results and discussing integration of species and ecosystem assessments. A brief session also introduced Key Biodiversity Areas and their connection to red lists.

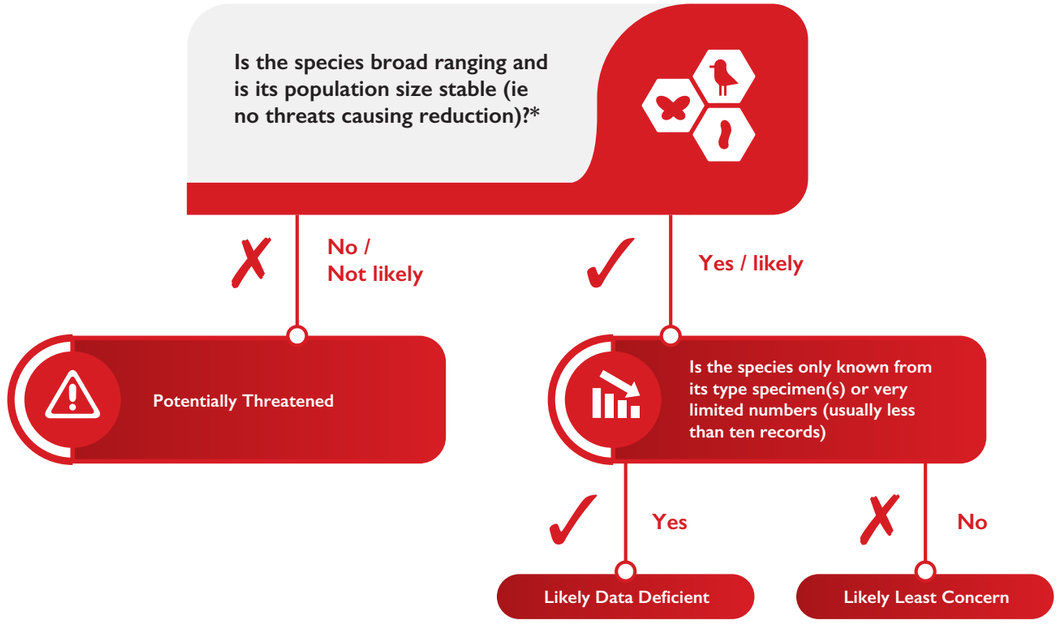
The next step of the process was for the EAD team to perform species assessments and share them with the team of trainers for review and feedback. A work plan that covered the rest of 2018 and early 2019, established the number of assessments to be produced each month, and the maximum intervals for sending comments back to the assessors. Regular email exchanges were also undertaken, to assist with questions or challenges. The ultimate goal of this exercise was to strengthen the capacity of EAD specialists in performing biodiversity status assessments to inform public policies on conservation and sustainable use. The lesson learned in Abu Dhabi will also help streamline the fairly uncommon practice within IUCN of simultaneous training in more than one knowledge product at a time, allowing for lower costs and higher efficiency of national biodiversity assessments.

2.4 Assessment Method and Process

Following the workshop, species assessments were led by the EAD team, with support from the Provita team in Caracas. During the workshop, case studies allowed to outline the assessment process and illustrate the application of the IUCN Red List Categories and Criteria (IUCN, 2012) and the regional guidelines (IUCN, 2012b).

Many species were initially identified as potentially either Least Concern (LC) or Data Deficient (DD). Completing the assessment documentation for these species is often much less intensive and prioritising completion of these assessments can ensure timely progress with the overall process.

As discussed below (Section 3), the Red List criteria measures quantitative thresholds of extinction risk based on reduction in population size, restricted area or small/restricted population size. For many species, only basic information and knowledge is needed to identify them as likely being LC or DD using the guiding flow chart below.



* In answering this question assessors do not need to measure actual values against criteria thresholds but use broader, and immediately available species information and expert knowledge.

Figure 2.4.1 Arabian tahr (*Arabitragus jayakari*)

Species identified as 'likely Least Concern' were assessed first. Those species identified as 'likely Data Deficient' were considered next, before finally moving on to those species that are likely to meet criteria thresholds and will require more rigorous attention.

The species accounts included in this publication are those for the species classified as threatened (Critically Endangered, Endangered and Vulnerable- Appendix 1), however a list of all species assessed is included for reference in Appendix 2.

The EAD team compiled all information necessary to complete species accounts, including distribution maps, and calculation of Extent of Occurrence (EOO) and Area of Occupancy (AOO). Draft assessments were sent to the Provita team to provide feedback and confirm the designation of Red List categories according to the data available. External revision of species accounts was also requested from an experienced consultant. EOO and AOO calculations were made following the standard procedure indicated by IUCN (2017).

Distribution maps were generated by georeferencing all known locations for each species. Based on these points, the minimum convex polygon was created. This polygon was adjusted and clipped with map of habitats (EAD, 2015) and altitude intervals that the species inhabits producing the respective distribution maps.

3.0

IUCN Red List Categories and Criteria

Jon Paul Rodríguez & Ariany Garcia-Rawlins

Despite its name, the IUCN Red List of Threatened Species is not really a list, nor it is only about threatened species. It is a comprehensive database of information on plants, fungi and animals of the world. A typical species account summarises knowledge on its classification, population trend, geographic distribution, habitat, threats, conservation actions, use and trade.

A key and unique feature of the Red List is the assessment of the species extinction risk, and its classification in one of the Red List categories. Determination of extinction risk is achieved by examining a series of symptoms, divided into five sets of criteria. Detailed guidance and information on how to apply the IUCN Red List Categories and Criteria can be found in several publications, including IUCN (2012a) and IUCN Standards and Petitions Subcommittee (2017), but a few basic ideas will be outlined below.

The five criteria, A-E, each focus on a particular measure of the size of the population or its geographical distribution, and their changes over time. They rely on observations of the past and inferences of the future, and on a wide variety of data sources to document trends. Assessors are encouraged to apply the five criteria, although the status of a species can be determined by only one. Initially, to new assessors, it often feels like the knowledge required to apply the criteria will only be available for a handful of species. But practice tends to teach that the diversity of indicators that can be applied more often than not allow well-justified listing for almost any species.

Species listed under Criterion A, are included due to reduction of population size. Risk is a measure of the likelihood an an undesired event over a defined period of time. So the shorter the period over which the population decline happens, or the higher the magnitude of the decline, higher will be the risk.

Criterion B is about declines in geographical distribution. There is more than one way to measure decline in range, but if species have a small range, and it is fragmented, or it experiences continuous declines or extreme fluctuations, species may be listed according to this criterion.

Extinction risk increases as populations get smaller, so Criteria C and D reflect this. If populations are small and are undergoing continuous declines, fragmentation or extreme fluctuations, they may be classified under Criterion C. If the breeding population is extremely small, then Criterion D comes into play.

Figure 3.1 Pharaoh eagle-owl (*Bubo ascalaphus*)

The final criterion, Criterion E, is rarely used to list species, but it is probably the most important one of all. As mentioned above, Red List categories are statements of risk, which is exactly what Criterion E is. For example, under Criterion E, a species is endangered if "the probability of extinction in the wild is at least 20 % within 20 years or five generations, whichever is the longer." This criterion provides an anchor for all the rest, and explicitly defines what threatened species are.

Species plants, animals, fungi and algae may be classified into eleven categories (see figure 3.2). The first three are fairly obvious and refer to species that have already disappeared. Extinct (EX) are those there is no reasonable doubt that the last individual has died, Extinct in the Wild (EW) means that it has gone extinct in its natural habitat and only exists under human care (e.g. botanical gardens or zoos) or in a region that does not correspond to its native range, while Regionally Extinct (RE) means that the last individual potentially capable of reproduction within the region has died or has disappeared from the wild in the region, or when, if it is a former visiting taxon, the last individual has died or disappeared in the wild from the region.

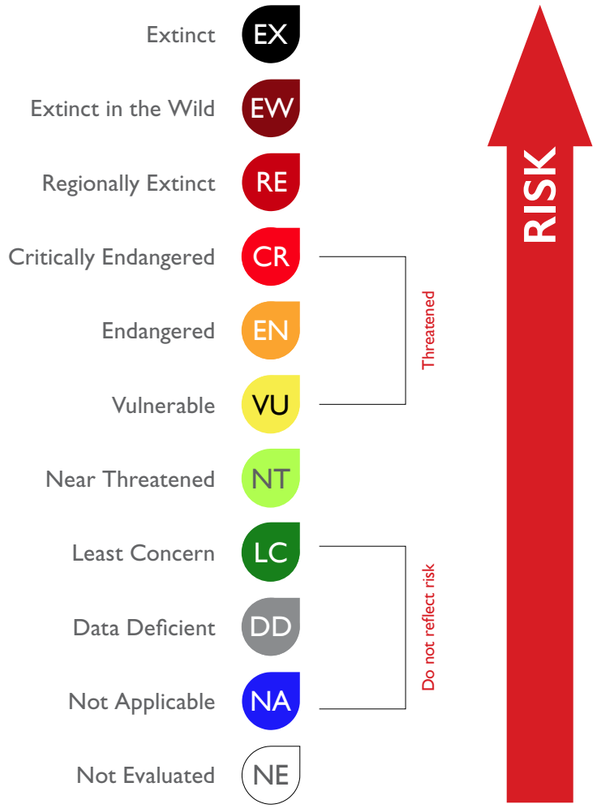
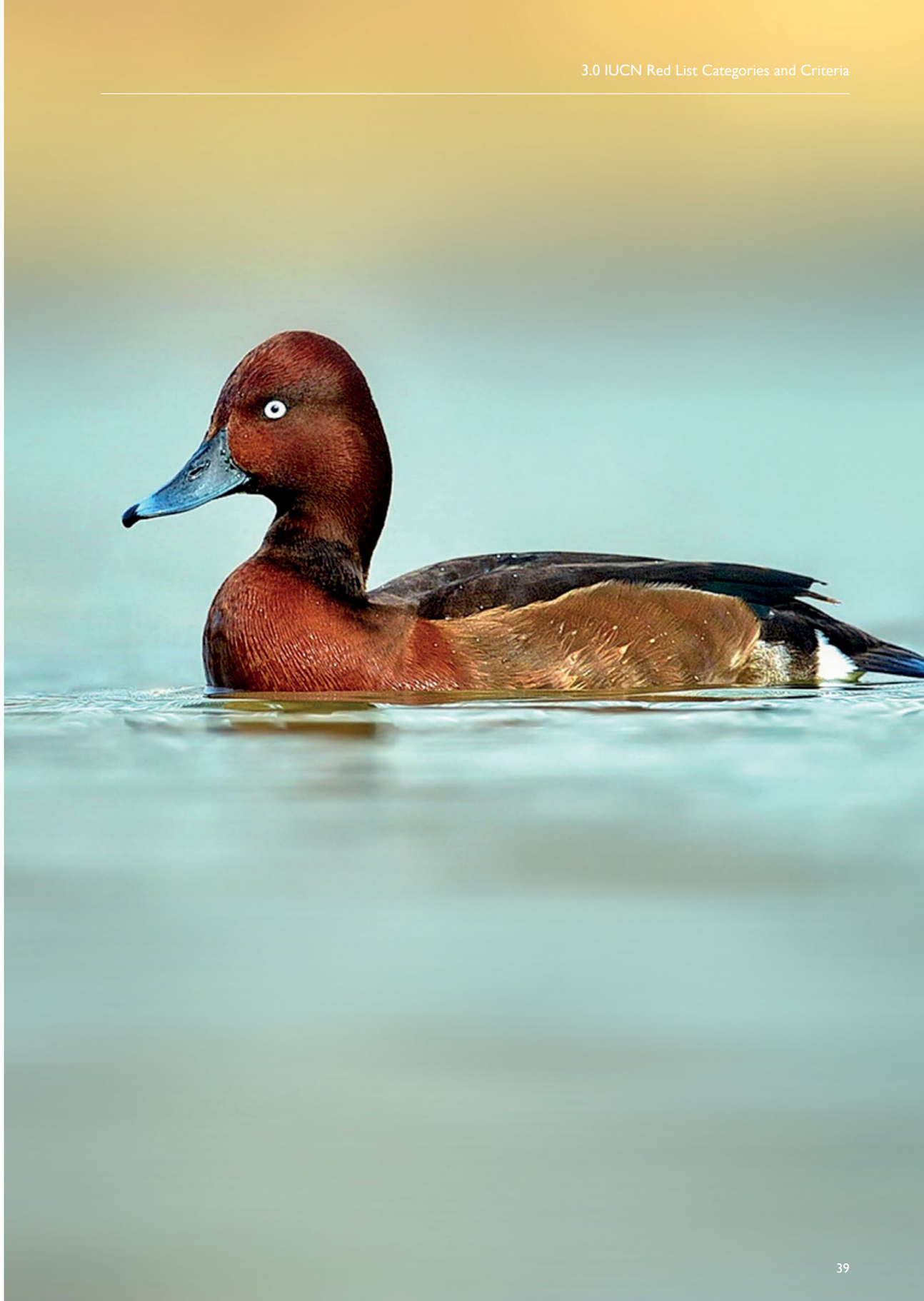


Figure 3.2. Categories of the IUCN threatened species.

The next three categories, **Critically Endangered** (CR), **Endangered** (EN) and **Vulnerable** (VU), are assigned on the basis of quantitative and qualitative criteria that reflect different levels of extinction risk, and jointly are referred to as 'threatened' species categories. In simple terms, what this means is that species considered CR face a very high immediate extinction risk, those classified EN face a high risk in the nearby future, while for VU species risk is also high, but in the medium term.

Near Threatened (NT) applies to cases that do not qualify for threatened at present, but are very close to the thresholds and may meet them in the near future. **Least Concern** (LC) should be assigned to species that do not qualify (nor are close to qualify) as threatened or NT. LC includes all species not facing an immediate threat and those that may be described as out of danger, however, IUCN recommends referring to them as LC, because all species face some level of extinction risk even if it is minimal or long-term.

The category **Data Deficient** (DD) is given to species when there is inadequate information to make a reliable assessment of its extinction risk. Prior to using this category it is recommended to examine all possible sources of information and analyse all available data. This to avoid classifying as DD species that are indeed threatened or extinct, thus potentially ignoring them when establishing conservation priorities. **Not Applicable** (NA) is used in national red lists to identify species that are not part of a stable wild population or are not in part of their natural range within the region of study. Finally, **Not Evaluated** (NE) refers to species that have yet not been contrasted with the thresholds of the categories and criteria for IUCN red lists. The categories DD, LC, NA and NE do not reflect extinction risk.



4.0

Assessment Results & Species Accounts

4.1 Abu Dhabi Red List of Species

A total of 74 species were categorised as threatened in the assessment of over 244 species in Abu Dhabi Emirate.

Our assessment showed that among terrestrial mammals species such as Blandford's Fox *(Vulpes cana)*, Arabian Tahr *(Arabitragus jayakari)*, Gordon's Wild Cat *(Felis lybica gordoni)* are Critically Endangered. Although none of the marine mammal species is critically endangered, species such as Finless Porpoise *(Neophocaena phocaenoides)* and Hawksbill Turtle *(Eretmochelys imbricata)* are endangered along with terrestrial species such as Sand Cat *(Felis margarita thinobia)* and Rüppell's Fox *(Vulpes rueppellii)*. Species which are Vulnerable are the Arabian Oryx *(Oryx leucoryx)*, the Arabian Sand Gazelle *(Gazella marica)* and the Arabian Gazelle *(Gazella arabica)* along with the Indian Ocean Humpback Dolphin *(Sousa plumbea)* and the Dugong *(Dugong dugon)*.

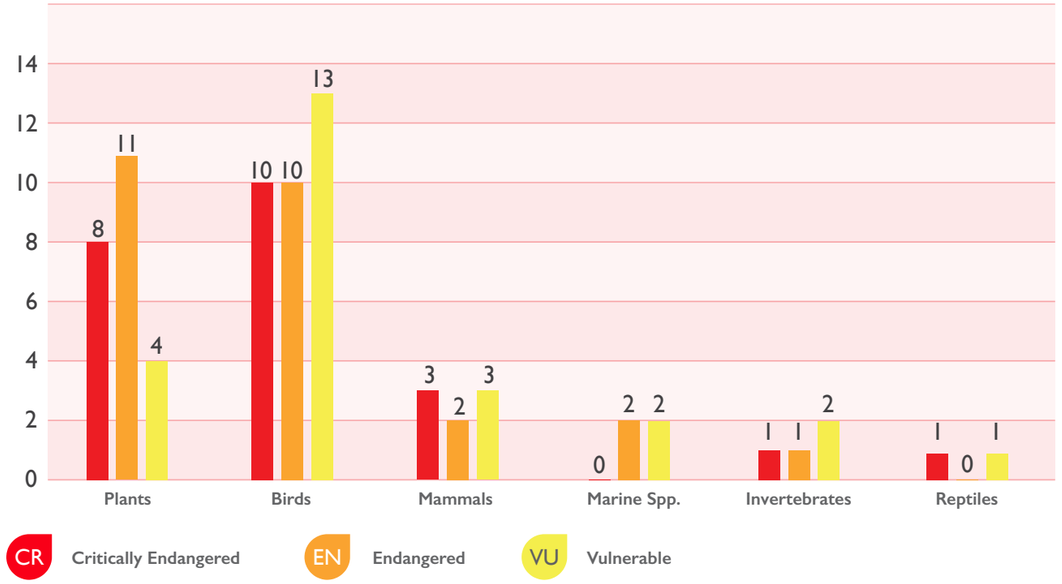


Figure 4.1.1: Number of threatened species under each taxa.

Among birds, of the 33 threatened species, 10 are Critically Endangered, 10 Endangered and 13 Vulnerable. Critically Endangered bird species include the resident Egyptian Vulture *(Neophron percnopterus)*, the Pharaoh Eagle-Owl *(Bubo ascalaphus)* the Greater Spotted Eagle *(Aquila clanga)* and the Sooty Falcon *(Falcon concolor)*. Key endangered species include Osprey *(Pandion haliaetus)*, the Socotra Cormorant *(Phalacrocorax nigrogularis)* and the Redbilled Tropicbird *(Phaethon aethereus)*, whereas species such as Crab Plover *(Dromas ardeola)* and Sand Partridge *(Ammoperdix heyi)* are listed as Vulnerable (Figure 4.1.1)

Among plants species such as Oriental Cherry *(Acridocarpus orientalis)*, Maiden Hairfern *(Adiantum capillus-veneris)* and Dwarf Palm *(Nannorrhops ritchieana)* are Critically Endangered where as *Vachellia flava*, *Vachellia tortilis*, White Saxaul *(Haloxylon persicum)* and *Prosopis cineraria* are listed as Endangered.

Among reptiles, Wonder gecko *(Teratoscincus keyserlingii)* is listed as Critically Endangered, while spiny-tailed lizard *(Uromastyx aegyptia)* is categorised as Vulnerable. Of the four threatened invertebrates, Yellow Desert Scorpion *(Vachoniolus globimanus)* is listed as Critically Endangered and Camel Spider (*Galeodes arabs*) is listed as Endangered. Species such as Arabian Black Fat-tailed Scorpion (*Androctonus crassicauda*) and Common Swall tail (*Papilio machaon*) are categorised as Vulnerable.

4.2 Conservation Status of Mammals in Abu Dhabi Emirate

Robert Gubiani & Rashed Al Zaabi

The UAE has a diverse mammal fauna with 59 species identified and recorded.

Although some species such as Arabian Leopard have become Regionally Extinct, historical records showed the country has nevertheless been an important mammal biodiversity hotspot. A wide range of suitable habitats still support both large and small mammals while on-going research continues to discover and redefine current occurrence range and population densities.

Within the Abu Dhabi Emirate, 41 species (including non-native) of terrestrial mammal have been recorded. This group comprises 18 families with the highest number of 9 species in Muridae followed by 5 species each in Bovidae, Canidae and Felidae. Increased survey efforts have recently rediscovered elusive species in the Abu Dhabi Emirate with records of Indian Crested Porcupine (*Hystrix indica*), Sand Cat (*Felis margarita thinobia*), Arabian Caracal (*Caracal caracal schmitzi*) and Rüppell's Fox (*Vulpes rueppellii*), which have been identified in various locations.

Although feral species can be found in almost all habitats within the emirate, they have not been included in the Abu Dhabi Red List. As these species are not endemic to the region, hybridisation can occur between distinct breeds (such as those seen in felines and canids). Therefore, it cannot be assumed that they represent true species and thus have been deemed Not Listed. Of the assessed species, 3 are Critically Endangered (CR), 3 as Vulnerable (VU) and 2 as Endangered (EN). The remaining species were assessed as either Least Concern (LC) or Data Deficient (DD).

Currently, Gordon's Wildcat (*Felis lybica gordoni*), Blanfords Fox (*Vulpes cana*) and Arabian Tahr (*Arabitragus jayakari*) were assessed as CR and they are most often associated with mountain habitats. Whereas Arabian Gazelle (*Gazella arabica*), Arabian Sand Gazelle (*Gazella marica*) and Arabian Oryx (*Oryx leucoryx*) are primarily desert species and they are all assessed as VU. Both Rüppell's Fox (*Vulpes rueppellii*) and Sand Cat (*Felis margarita*) are highly elusive desert species and they are more sensitive to direct threats because they require high quality habitat. However, their large range of occurrence provides some protection and they are considered to be Endangered (EN).

The on-going protection and monitoring of these species is a primary focus for EAD. The allocation of designated protected areas across the emirate and their planned expansion in the future, provides valuable refuge and foraging ground for all environmentally sensitive mammal species within the emirate. The re-introduction of the Arabian Oryx is a success story of EAD's conservation programme, as is the continued rediscovery of highly elusive species as a result of on-going monitoring programmes.

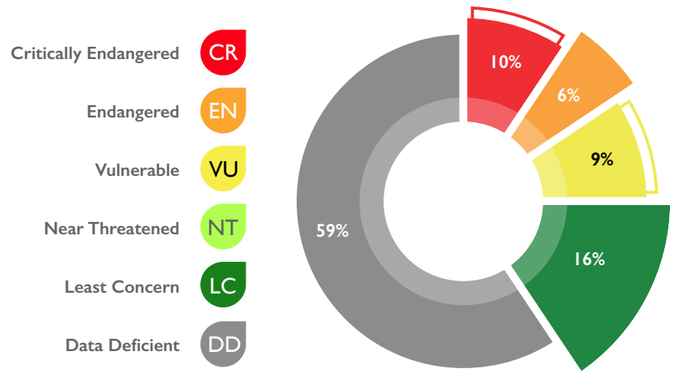


Figure 4.2.1: Status of mammal species assessed.

Arabian Gazelle
(Gazella arabica)

VU

Local Red List Assessment Category:
Vulnerable B1ab(iii)+2ab(iii)

Global Red List Assessment:
2018 Vulnerable (VU)

Assessors:
Gubiani, R., Alzaabi, R.

Rationale

Gazella arabica has an area of occupancy (AOO) less than 200 km^2 and an extent of occurrence (EOO) less than 20,000 km^2, which added to the degradation of its habitat and the fragmentation of the population, the category of Vulnerable (VU) is assigned.

Distribution

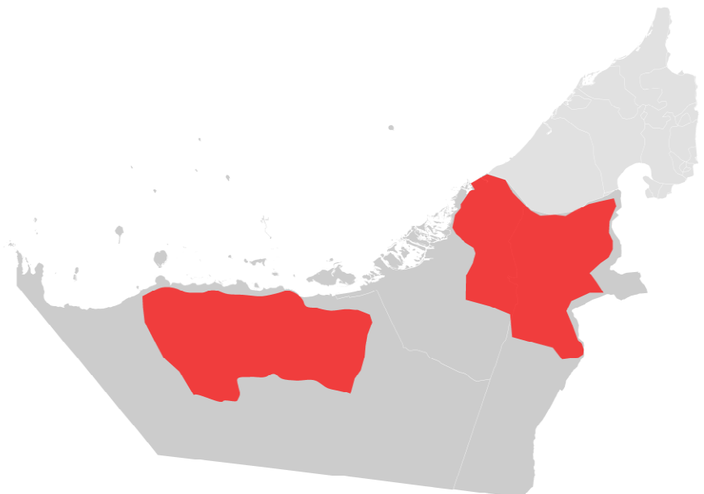
In Abu Dhabi this species has been recorded in areas around Ghantoot, Sweihan, Al Ain, Madinat Zayed, Al Mirfa and Al Houbara Protected area.

Population

Very few wild individuals exist within the Abu Dhabi Emirate with the majority present considered likely to be escapees from private collections. A recent aerial survey identified 10 free roaming gazelle in the Al Dhafra region. Although a survey was not conducted in the eastern region it is estimated that similar number exist there. Therefore, it is considered that there are <50 individuals in Abu Dhabi Emirate.

It should be emphasised that this figure applies only to animals considered fully 'wild' under the IUCN Red List Guidelines. Large numbers of Arabian Gazelles are kept in many private collections and breeding centres, especially in the UAE. In Abu Dhabi, several thousands are under some form of management.

Distribution Map



Arabian Gazelle *(Gazella arabica)*

Population Trend

Population is decreasing.

Threats

The main threats to this species are, in parts of the range, habitat degradation due to overgrazing and population fragmentation. Reduced viable habitat is also a threat. Within captive populations inbreeding is likely occurring and genetic weakness may result. Given the high density of animals within enclosures, disease may cause loss of overall numbers.

Conservation Actions Underway

Population management is occurring within protected areas although a dedicated management plan for the species has yet to be finalised. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Arabian Sand Gazelle
(Gazella marica)

VU

Local Red List Assessment Category:
Vulnerable C2a(i); D1

Global Red List Assessment:
2018 Vulnerable (VU)

Assessors:
Gubiani, R., Alzaabi, R.

Rationale

Gazella marica has a decreasing population trend. A recent aerial survey over the emirate counted less than 500 individuals distributed widely, but in a single sub-population, and a continuous decline is inferred. Therefore this species is categorised as Vulnerable (VU).

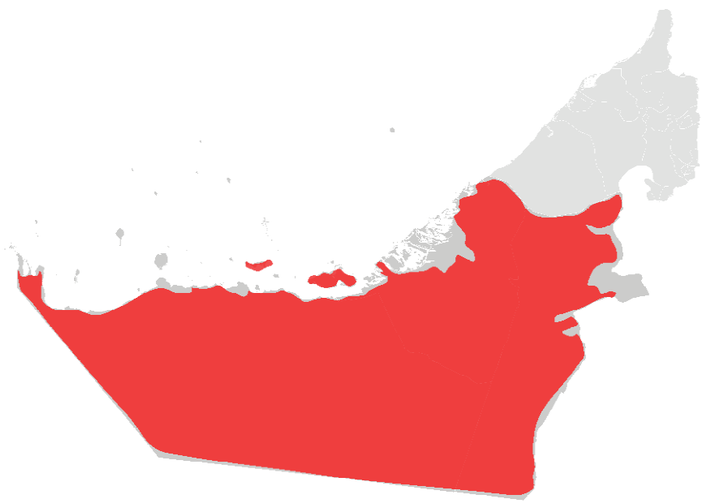
Distribution

This species is widely distributed from the Arabian Peninsula with historical distribution being throughout the sand deserts, limestone plateau and gravel plains of the Arabian Peninsula. Within Abu Dhabi this species has been recorded across the emirate.

Population

There are no estimates of former population size, but numbers are considered to be greatly reduced and the range of the species has declined markedly. A recent aerial survey in 2018 in the Abu Dhabi Emirate recorded less than 500 individuals. Previous survey records had questionable results and were deemed to be inaccurate and omitted from present data.

Distribution Map



Arabian Sand Gazelle *(Gazella marica)*

It should be emphasised that this figure applies only to animals considered fully 'wild' under the IUCN Red List Guidelines. Large numbers of Arabian Sand Gazelles are kept in many private collections and breeding centres, especially in UAE. In Abu Dhabi, several tens of thousands are under some form of management, especially in private collections.

Population Trend

Population is decreasing.

Threats

The main threats to this species in parts of the range, is habitat degradation due to overgrazing. Reduced viable habitat is also a threat. Within captive populations inbreeding is likely occurring

Conservation Actions Underway

Population management is occurring within protected areas although a dedicated management plan for the species has yet to be finalised. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Arabian Oryx
(Oryx leucoryx)

VU

Local Red List Assessment Category:
Vulnerable D1

Global Red List Assessment:
2018 Vulnerable (VU)

Assessors:
Gubiani, R., Alzaabi, R.

Rationale

Oryx leucoryx has a current population of less than 1,000 mature individuals. Its distribution is restricted to few geographical locations albeit protected and managed to a small extent. Despite threats to this species being significantly reduced it is categorised as Vulnerable (VU).

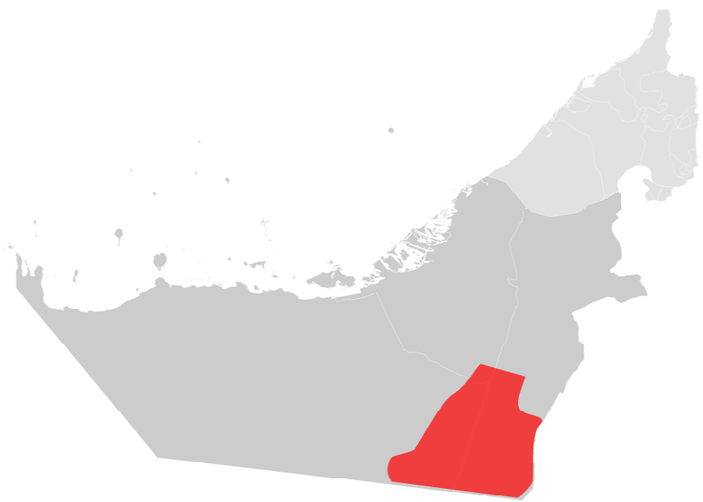
Distribution

Within the Abu Dhabi Emirate this species has been reintroduced to the Arabian Oryx Protected Area in the Al Dhafra region and represents the largest population of free roaming Oryx in the emirate.

Population

Reintroduction and breeding programmes have increased the population of Arabian Oryx within the emirate to <1,000 in the protected areas (Environment Agency - Abu Dhabi 2010). Although the population numbers are high within this protected area, access is strictly controlled and therefore reports from the general public are rare. On-going monitoring programmes occur in order to determine breeding success of the population. Similarly, the populations present within the Arabian Oryx Protected Area are supplemented with water and feed at designated feed stations.

Distribution Map



Arabian Oryx *(Oryx leucoryx)*

Population Trend

Population trend is stable.

Threats

The main threats to this species are loss of habitat from development projects and droughts. Additional pressure for food resources from livestock as well as the distribution of disease from domestic ungulates could also pose a threat to the current population.

Conservation Actions Underway

This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species. Almost all released animals occur in protected areas. The captive population is well-managed, with an international studbook. A regional Arabian Oryx conservation strategy was developed in 2007. The Coordinating Committee for the Conservation of the Arabian Oryx (CCCAO), an inter-governmental body charged with co-ordination of conservation efforts within the Arabian Peninsula.

Arabian Tahr
(Arabitragus jayakari)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(iii); D

Global Red List Assessment:
2018 Endangered (EN)

Assessors:
Gubiani, R., Alzaabi, R.

Rationale

The Arabian Tahr has a very small geographic occurrence with less than 100 km^2 of extent, restricted to a single location affected by habitat loss and reduction of its quality, combined with a very small population in a continuing decline. All of these deems this species to be categorised as Critically Endangered (CR).

Distribution

The entire world population of Arabian Tahr occurs in the mountains of northern Oman and the United Arab Emirates, where it prefers north facing slopes between 1,000 and 1,800 m, which are characterised by relatively high rainfall, cooler temperatures and diverse vegetation. The small population that occurs in the Abu Dhabi Emirate is only present on Jabal Hafit.

Population

There is no recent estimate of total population, though there are probably fewer than 5,000 animals globally. Although some populations may have increased through protection, overall it is likely that the species continues to decline.

Definitive numbers for the Jabal Hafit population have not been established at this point in time. However visual assessments indicate that no more than 15 individuals occur. No record of immigration or emigration of individuals into nearby populations have been recorded recently or historically indicating a stand-alone satellite population.

Distribution Map

Arabian Tahr *(Arabitragus jayakari)*

Population Trend

Population trend is unknown.

Threats

The greatest threat to the survival of the species is loss of habitat. Continued development on or in the surrounding area of Jabal Hafit has reduced available foraging area for the species, which is important during extended periods of drought. Competition with livestock, primarily domestic goats further reduced the availability of food and there is evidence that they are susceptible to diseases that affect domestic goats. The recent escape of Nubian Ibex (*Capra nubiana*) and Esfahan mouflon (*Ovis orientalis isphahanica*) on Jabal Hafit will also increase resource competition and could possibly lead to hybridisation between these species and Arabian Tahr.

Conservation Actions Underway

Currently a satellite-tracking programme is planned which aims to determine feeding, breeding and home range ecology for the Jabal Hafit population. The additional data obtained will lead to a more rigorous management programme to be implemented as well as the first known population assessment in the Abu Dhabi Emirate. Hunting of the species is illegal under Federal Law 24 of 1999.

Should wild populations unexpectedly crash, small viable populations are currently present within private collections and are likely sufficient enough to restock wild populations should the need be warranted. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Blanford's Fox
(Vulpes cana)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(iii); D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Gubiani, R., Alzaabi, R.

Rationale

Vulpes cana has a small extent of occurrence and area of occupancy, less than 30 km², and it is distributed in a single location threatened by habitat loss and competition with invasive species. This species has an inferred population of less than 50 individuals. For this situation the species is categorised as Critically Endangered (CR).

Distribution

Recent camera trap investigations re-discovered the presence of this species on Jabal Hafit in Al Ain in 2018 and 2019.

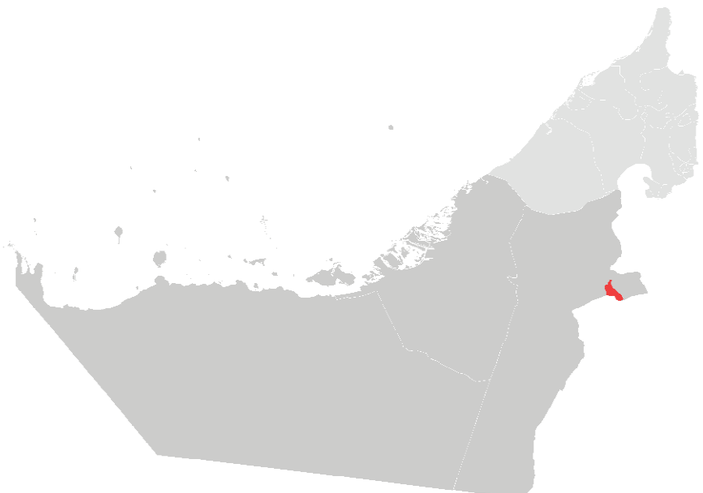
Population

Little population information is known for this species generally and none is available for the Abu Dhabi Emirate. Only recently have records occurred for this species on Jabal Hafit. Population density has yet to be determined.

Population Trend

Population trend is unknown.

Distribution Map



Blanford's Fox *(Vulpes cana)*

Threats

There are currently no obvious major threats resulting in range-wide declines of Blanford's Fox. However, general habitat loss, due mainly to expanding settlement and tourism development, and human persecution and indirect mortality, do pose localised threats. Loss of viable habitat along coastal areas with mountainous ecosystems may be of significant threat to populations present in the northern emirates. In Abu Dhabi Emirate competition with invasive species for limited resources is likely affecting the population present on Jabal Hafit. Similarly, development on Jabal Hafit has also reduced viable habitat for this species.

Conservation Actions Underway

Currently no specific conservation programmes are in place. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Rüppell's Fox
(Vulpes rueppellii)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Gubiani, R., Alzaabi, R.

Rationale

Vulpes rueppellii has an elusive nature but recent information collected indicated that up < 100 mature individuals exist within Abu Dhabi Emirate. Additionally, the continued loss of habitat quality is one of the principal threats. For those reason this species is categorised as Endangered (EN).

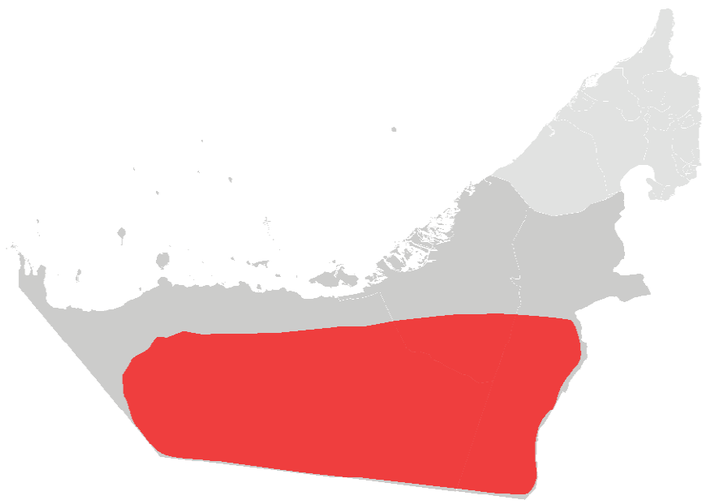
Distribution

In Arabia this species is generally confined to the arid steppe and desert regions of the Peninsula. Populations in Abu Dhabi have occurred almost exclusively in arid desert environments with confirmed historical records occurring in the empty quarter as far back as 1992. Recent survey records confirm their presence in the Al Dhafra region with both juvenile and adult individuals recorded, indicating an active breeding population. Given the lack of resources within these areas it is highly likely that average home range for this species could be quite significant and true distribution is difficult to determine given its highly elusive nature.

Population

Recent emirate wide population surveys have occurred and provide some indication of population density. The habitat quality within these survey locations is considered be reasonable although grazing pressure has reduced overall habitat quality

Distribution Map



Rüppells Fox *(Vulpes rueppellii)*

ultimately reducing carrying capacity. Overall population statistics are currently not available but given the likely home range requirements it is estimated that up <50 breeding pairs exist within Abu Dhabi Emirate.

Population Trend

Population trend is unknown.

Threats

Major threats to this species include development on important habitat areas outside of protected zones. Agricultural and oil and gas development also continues to remove important Rüppell's Fox habitat. More concerning is the continued overgrazing of desert environments by large populations of privately owned camels. The overgrazing greatly reduces the suitable habitat for Rüppell's Fox prey items and increases desertification levels. The already limited resource base for this fox species will increase pressure on the overall population as carrying capacity of the habitats are greatly reduced.

Conservation Actions Underway

This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species. Currently no specific conservation programmes are in place, however further monitoring of the species is planned.

Sand Cat
(Felis margarita thinobia)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Gubiani, R., Alzaabi, R.

Rationale

Felis margarita has an elusive nature, but the recent addition of camera trap information allowed a more robust decision to be made. This species has a small population with less than 150 mature individuals estimated to exist within Abu Dhabi Emirate. The Principal threats are the effects of hybridisation with domestic cat species that has likely occurred and is evidenced by the presence of known pathogens transferral between feral and this native cat species. For those reasons this species is categorised as Endangered (EN).

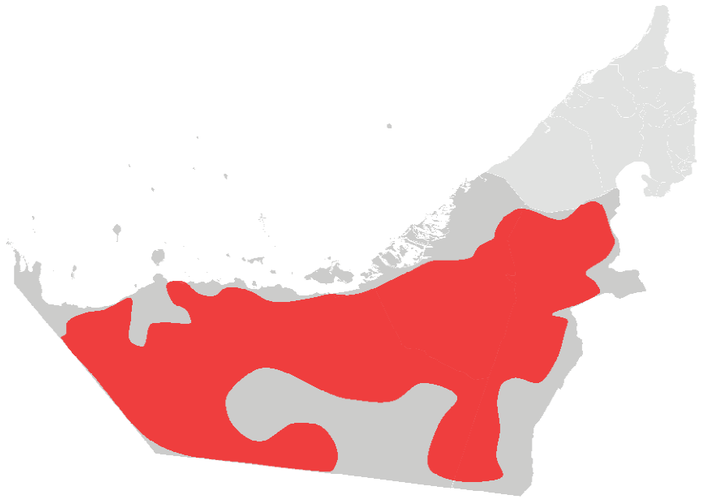
Distribution

The Arabian Sand Cat was initially recorded in the Arabian Peninsula in 1950, however due to the elusive nature of this species historical records are scarce. Of the records obtained within the UAE, sightings have occurred in Al Ain, Al Dhafra region, Sweihan, Al Houbara Protected area, Liwa, Barqa Al Soqour Protected area, Bida' Hazaa' Protected area, Al Ghada Protected area and the borders of the UAE near Oman and Saudi Arabia.

Population

Recent emirate wide population surveys have not occurred although localised surveys provide some indication of population density. The habitat

Distribution Map



Sand Cat *(Felis margarita)*

quality within these survey locations is considered high given the long term protection and reduced grazing pressure from livestock. Similarly, militarised areas inadvertently provide protected status allowing no grazing to occur and habitat preservation to continue. Limited research and the shy behaviour of this species has made it very difficult to obtain accurate population figures. Recent surveys in Al Houbara Protected area recorded at least 20 different individuals while a separate small scale survey recorded 2 individuals in Al Ghada Protected area in 2017. The coverage of these areas and the distribution of known individuals provides an estimate of ≤ 150 individuals within Abu Dhabi Emirate.

Population Trend

Population trend is unknown, likely decreasing.

Threats

Major threats to this species include the development on important habitat areas outside of protected zones. Similarly, the introduction of domestic cats is leading to hybridisation with the Arabian Sandcat with some populations harbouring domestic diseases such as Toxoplasmosis. This hybridisation in addition to continued hunting and persecution further reduces the rigidity of the population genetics for this species. The continued increase in feral cat populations also results in significant competition between already limited food sources and pressure on den sites needed for reproduction. Agricultural and oil and gas development also continues to remove important Sand Cat habitat.

Conservation Actions Underway

The establishment of protected areas has likely allowed some reduction in population loss for this species. Similarly, additional survey programmes and genetics studies are providing valuable information regarding the biology, ecology and population structure of this species within the Abu Dhabi Emirate. Protected areas have been established. Furthermore, a dedicated breeding programme at Al Ain Zoo aims to breed enough individuals to release into the wild, supplementing restricted gene pools or re-populating areas that have recently gained protected status.

This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Gordon's Wildcat
(Felis lybica gordoni)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(iii)+2ab(iii)

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Gubiani, R., Alzaabi,R.

Rationale

Felis lybica gordoni has a very small EOO and AOO and is present in a single location. Loss of habitat, hybridisation with domestic cats and competition with feral cat population, are some of the principal threats. Additionally a very small population of <10 mature individuals allow this species to be classified as Critically Endangered (CR).

Distribution

This distinct sub-species is known to occur within the UAE and Oman although distribution may be greater and genetic testing of type specimens or individuals in regional collections are warranted. Important site for this taxon are within Jabal Hafit and the surrounding area of Al Ain.

Population

Breeding populations for this species is currently unknown with additional information needed to aid in determining overall species density within the emirate. All records have occurred at Jabal Hafit indicating the presence of a small population likely to be < 10 individuals. This species is considered to be rare in the emirate although populations are known to occur in more mountainous areas within the UAE. It is not known whether movement between the different populations within the country do occur.

Distribution Map

Gordons Wildcat *(Felis lybica gordoni)*

Population Trend

Population trend is unknown, likely decreasing.

Threats

Major threats to this species include the development on Jabal Hafit and rapid development in the surrounding foothills. Similarly, the introduction of domestic cats is leading to hybridisation with Gordon's Wildcat, further reducing the rigidity of the population genetics for this area. The continued increase in feral cat populations also results in significant competition between already limited food sources and pressure on den sites needed for reproduction. Agricultural development also continues to remove important Gordon's Wildcat habitat resulting in this species considered to be one of the most threatened in Arabia.

Conservation Actions Underway

This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

4.3 Conservation Status of Marine Species in Abu Dhabi Emirate

Himansu Sekhar Das & Hind Mohsen Al Ameri

Although fragile, the United Arab Emirates ecosystem is home to an enormity of marine life. Green turtles, humpback dolphins, sea snakes, dugongs and almost 500 species of fish are all found in the waters of the southern Gulf and the east coast of Oman Gulf which laps at Fujairah's rocky shore.

In Abu Dhabi, we monitor nine species of marine mammals and reptiles that includes dugongs, sea snakes, marine turtles and dolphins alongside their habitats.

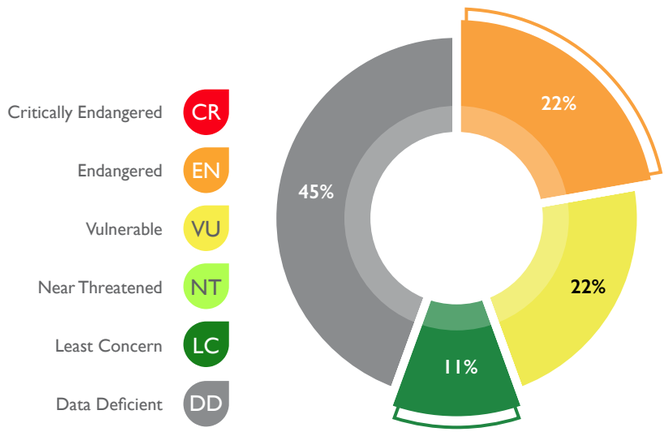


Figure 4.3.1: Status of marine species assessed.

Of the nine marine species assessed, two species were evaluated as Endangered (EN), two species were Vulnerable, one species was Least Concern (LC) and four species were Data Deficient(DD).

Federally, both laws number (23) and (24) of 1999 protect and conserve marine species as well as their habitats. In order to conserve and protect these species, a number of actions have been taken and others are underway. Protected areas have been established on the basis of the results found through annual monitoring and surveys. Protected areas not only prohibit activities but also enforce speed limits for vessels in the areas where these species occur in high density. The country is also signatory to certain international conventions that aid in implementing conservation actions. Long-term monitoring for all species is in place with annual revision to enhance and broaden data collected.

Dugong
(Dugong dugon)

VU

Local Red List Assessment Category:
Vulnerable B2ab(iii, v)

Global Red List Assessment:
2018 Vulnerable (VU)

Assessors:
Das, H.S., Al Ameri, H.

Rationale

Dugong dugon are found occupying the seagrass areas of Abu Dhabi. Aerial surveys estimate a population of 3,000 in Abu Dhabi. The population appears to have remained stable over the past 18 years. This species almost exclusively occupies seagrass areas which translates to an estimated AOO of 1,500 km². Seagrass throughout Abu Dhabi is continually declining in extent and quality due to coastal dredging and reclamation. Given the current range of impact from such threatening events, locations are estimated to be less than 10. By-catch and entanglement also pose a significant threat to this species. Various conservations measures are in place for this species, however, habitat loss continues to be the major threat to this species moving forward. It is therefore assessed as Vulnerable (VU).

Distribution

Dugongs are distributed mostly in Abu Dhabi coastal waters in and around the seagrass meadows. Most of the dugongs occur in smaller groups (group size 1). However, large herds of over 100 dugongs are commonly seen during winter. Mother and calf grouping (indicator of reproductive health of the population) with around 12% of sightings has been reported from Abu Dhabi waters. Dugongs are distributed mostly up to a depth of 15 m.

Distribution Map

Dugong *(Dugong dugon)*

Population

Around 3,000 dugongs occur in Abu Dhabi waters based on aerial survey conducted from 2004-2015. They occur in and around seagrass meadows.

Population Trend

Relatively stable.

Threats

By-catch from abandoned/illegal fishing nets causing the dugong to drown remains the main threat. Vessel strikes, degradation of foraging grounds due to coastal developments as well as other anthropogenic activities, and water pollution are factors that threaten the survivability of this species.

At least 200 dugongs have died in the last 15 years (17 per year in last 3 years). The main cause of death found was due to drowning followed by vessel strike. Loss of seagrass meadows due to dredging, land filling and pollution are well known and documented. Seismic survey and activities related to oil exploration exist but are not quantified. Moreover, there are indirect threats from climate change.

Conservation Actions Underway

Dugong conservation is a priority under the Convention of Migratory Species (CMS) of UNEP. CMS has established a dugong secretariat supported by EAD and the government of Abu Dhabi to implement conservation actions for the species across its range. There are currently common conservation action plans, which have been jointly implemented by all the dugong range states. The action plans include but are not limited to monitoring and research, investigation of mortality, ecological and biological studies of the dugong and its habitats, education and awareness programmes, as well as data sharing and regional cooperation. Protected areas have been established for most seagrass areas and hunting for consumption is banned. Some of the best dugong sites are within EAD's marine protected areas such as Marawah Marine Biosphere Reserve and Al Yasat Marine Protected Area.

Hawksbill Turtle
(Eretmochelys imbricata)

EN

Local Red List Assessment Category:
Endangered B2ab(iii)

Global Red List Assessment:
2018 Critically Endangered (CR)

Assessors:
Das, H.S., Al Ameri, H.

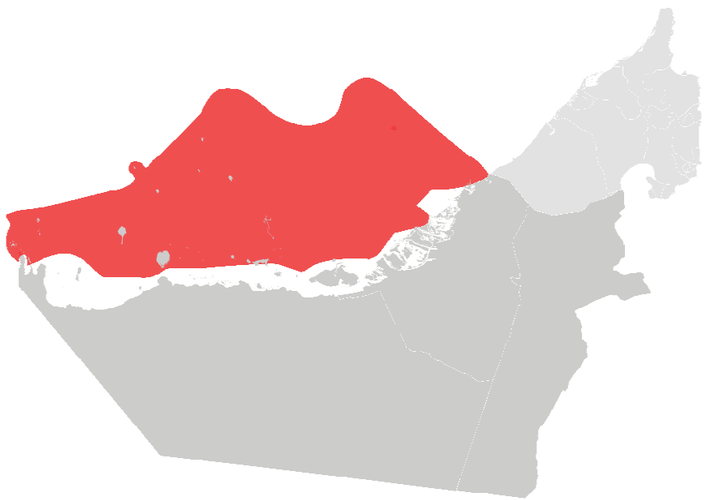
Rationale

Eretmochelys imbricata is broadly distributed near Abu Dhabi coastal shores in and around coral reefs. The estimated population is 1,000 individuals and adult mortality due to threats is between 10 to 15 individuals (2004-2017) per year. Known threats include by-catch and habitat loss. Based on satellite telemetry, the total range of foraging areas is estimated at 40-60 km². Moreover, the total range of nesting sites is estimated at 15 km². This provides an AOO estimate well below the 500 km². There is a continuing decline in the quality and extent of coral reef habitat, on which this species is dependent. This decline in quality and extent of habitat is due to coral bleaching and other associated factors, driven by increasing sea surface temperatures. Given this, threat defined less than 5 locations. This species is assessed as EN.

Distribution

Hawksbill sea turtles have a wide range of distribution, found predominantly in tropical reefs of the Indian, Pacific, and Atlantic Oceans. The species is closely associated with warm tropical waters. In Abu Dhabi waters of southern Arabian Gulf, hawksbills are widespread with multiple foraging sites in and around reef habitats and nest on sandy beaches of several offshore islands. Data from satellite tagging programme of post nesting hawksbills reveals that the species do not migrate out of the Arabian Gulf.

Distribution Map



Hawksbill Turtle *(Eretmochelys imbricata)*

Population

Aerial survey (2004 – 2015) reveals an estimated a foraging population of 1,000 (approximately 5,000 is the total sea turtle population of which 20% are hawksbills on the basis of mortality data). They occur in and around of coral meadows of near coastal waters of Abu Dhabi waters. At least 160 to 242 nests per year (2000-2017) have been reported from Abu Dhabi nesting beaches.

Population Trend

Population trend is stable.

Threats

By-catch from abandoned/ illegal fishing nets, vessel strikes, degradation of foraging grounds due to climate change, coastal developments as well as other anthropogenic activities, and water pollution are factors that threaten the survivability of this species. Oil and gas exploration, seismic surveys also impact hawksbill turtles and their nesting and foraging habitat.

Conservation Actions Underway

UAE is signatory to IOSEA Sea Turtle MoU. Abu Dhabi implements conservation actions under the convention. The action plans include but are not limited to monitoring and research, investigation of mortality, ecological and biological studies of its habitats, education and awareness programmes, as well as data sharing and regional cooperation. More research is required relating to temperature and climate change.

Indo-Pacific Finless Porpoise *(Neophocaena phocaenoides)*

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Vulnerable (VU)

Assessors:
Das, H.S., Al Ameri, H.

Rationale

Neophocaena phocaenoides is little known in the Arabian Gulf, and more particularly Abu Dhabi waters. The survey with baseline of 2014-15 and repeat survey of 2017 showed that further repeat surveys will validate the data on abundance of the species. However, from two surveys that were conducted in Abu Dhabi coastal waters, the conclusion is that the species has a very small population (that can be more than 50 but certainly less than 250), hence is categorised as Endangered (EN).

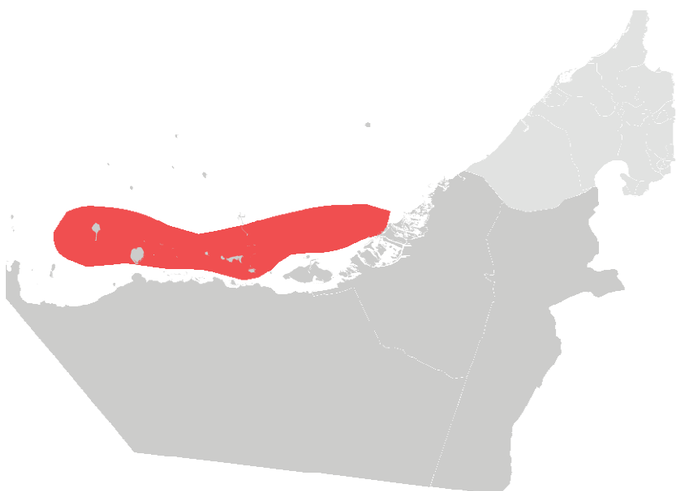
Distribution

Distribution limited to the coastal waters of Asia. The species is very shy that surfaces quietly, hence difficult to locate. They occur in small groups of size 1-12 individuals. All sightings are in coastal waters of Abu Dhabi at a depth up to 15 m.

Population

Abu Dhabi waters contain habitat that is important for the survival and recovery of threatened and declining species such as Indian Ocean humpback dolphin (IUCN-Endangered), Indo-pacific bottlenose dolphin (IUCN-DD), finless porpoise (IUCN-Vulnerable), and dugong (IUCN-Vulnerable) (Preen 2004; Das 2014; Grandcourt *et al.* 2015; Díaz López *et al.* 2017). Cetacean survey of Abu Dhabi coastal waters (2014-15 and 2017) by vessel based survey spanning 5 months resulted in 14 encounters with finless porpoises. At least 51 individuals were recorded. Finless porpoises were observed, for the first time in all three regions but do not appear very abundant across most of their range.

Distribution Map



Indo-Pacific Finless Porpoise *(Neophocaena phocaenoides)*

Population Trend

Population trend is unknown.

Threats

Coastal development, oil and gas drilling, seismic survey as well as boat traffic are some of the key threats.

Conservation Actions Underway

Protected areas have been established and it is illegal to catch or hunt dolphins in Abu Dhabi as the species is protected under Federal Law (24) of 1999. Long-term research and monitoring are already in place. Inter-agency cooperation with fisheries for effective management of fisheries and fishing activities is planned.

Indian Ocean Humpback Dolphin *(Sousa plumbea)*

VU

Local Red List Assessment Category:
Vulnerable D1

Global Red List Assessment:
2018 Endangered (EN)

Assessors:
Das, H.S., Al Ameri, H.

Rationale

Sousa plumbea is broadly distributed in Abu Dhabi Emirate. Latest population surveys (2017) place the total number of mature individuals at 554, additionally was observed a continuing decline between 1986 and 1999. Given the small population size, this species could easily become more threatened and monitoring of human-caused mortality should be emphasised. For all these reasons this species is categorised as Vulnerable(VU).

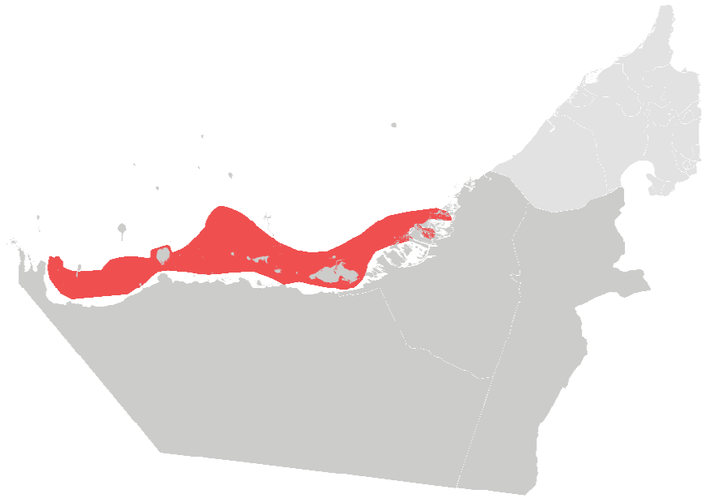
Distribution

Indian Ocean Humpback dolphins inhabit shallow coastal waters of the tropics. In Abu Dhabi, the species is distributed along the coastal waters including, mangrove channels, natural and dredged channels and bays. They prefer shallow and sheltered water to open sea.

Population

No absolute data but marine wildlife aerial surveys suggest a seventy percent decline in small dolphin densities from 1986 to 1999. As of 2017 there are 701 recorded individuals in Abu Dhabi of which 79% are adults; this, equals to 554 mature individuals.

Distribution Map



Indian Ocean Humpback Dolphin *(Sousa plumbea)*

Population Trend

Population trend is unknown. No trend data available.

Threats

Coastal development, oil and gas drilling, seismic survey as well as boat traffic are some of the key threats.

Conservation Actions Underway

Speed limits are in place for vessels in areas where this species occurs in high density; this is not very well enforced. Protected areas have been established with implementations of dynamic protected areas. Monitoring the species by direct observation or indirectly *via* hydrophones as well as inter-agency cooperation with fisheries for effective management of fisheries and fishing activities is planned. Furthermore, fishing regulations, research and communications with targeted stakeholders is ongoing.

4.4 Conservation Status of Birds in Abu Dhabi Emirate

Shahid Bashir Khan, Shakeel Ahmed & Salim Javed

Introduction

The United Arab Emirates has recorded more than 460 bird species, out of these 427 species have been recorded in the Emirate of Abu Dhabi. Abu Dhabi is important for many breeding bird species. The emirate supports the nearly all but one breeding colony of the globally threatened Socotra Cormorant with an estimated population of nearly 50,000 - 60,000 breeding pairs. Most offshore islands of the emirate are important for four breeding terns, of which the Lesser Crested Tern (*Thalasseus bengalensis*) is most numerous. The only two breeding colonies of Crab Plover (*Dromas ardeola*) are found in Abu Dhabi. Species such as Sooty Falcon (*Falco concolor*) and Greater flamingo (*Phoenicopterus roseus*) breed only in Abu Dhabi. The bird fauna of the emirate is not only important locally but also of regional and global significance, given the presence of some key breeding and wintering species.

For the regional red listing exercise, we assessed a total of 49 species after decisions based on different filters. Out of these, 33 were categorised as threatened, out of these ten species were Critically Endangered (CR), 10 species were evaluated as Endangered (EN) and another 13 species were categorised as Vulnerable (VU). Nearly 22% of all the assessed species were Near-threatened while 10% as Least Concern (LC).

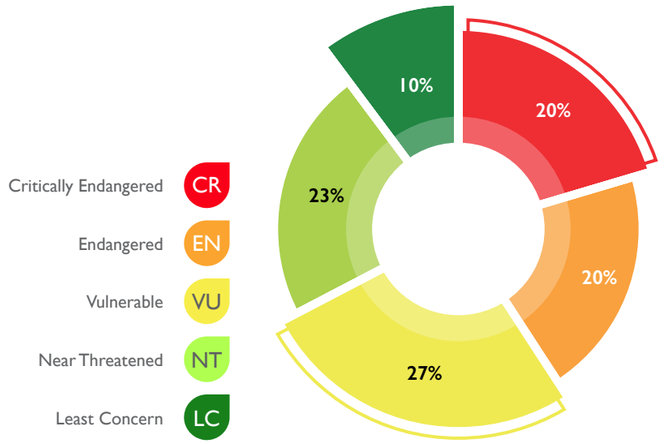


Figure 4.4.1: Status of bird species assessed.

Out of these, species specific action plans have been prepared for the Western Osprey (*Pandion haliaetus*), a breeding seabird. Breeding species such as Red-billed Tropicbird (*Phaethon aethereus*), Socotra Cormorant (*Phalacrocorax nigrogularis*), Western Osprey, Egyptian Vulture (*Neophron percnopterus*), Saunders's Tern (*Sternula saundersi*), Barn Owl (*Tyto alba*), Pharaoh Eagle-Owl (*Bubo ascalaphus*), Sooty Falcon (*Falco concolor*) and Crab Plover, are being regularly monitored.

Barn Owl
(Tyto alba)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Tyto alba has very small population of < 50 individuals. Although its geographic range is small, there is no evidence of decline or fluctuation in the area or population. The species is a resident breeding species without any significant immigration of propagules that are likely to reproduce in the region, thus its status remains unchanged. Therefore, this species is categorised as Critically Endangered (CR).

Distribution

The species is recorded in open country with trees and semi desert near habitation. Its distribution extends from Al Ain in the south-east along coastal areas in Abu Dhabi and extends up to Dhafra region.

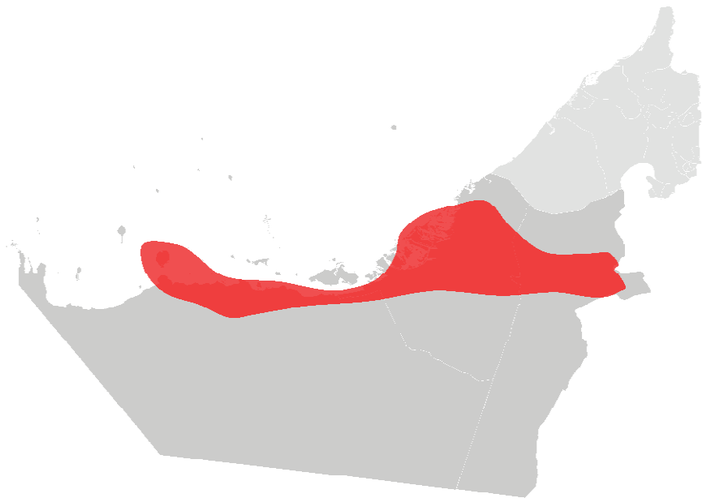
Population

The current population is estimated to be less than 50 mature Individuals or equal to 10-20 breeding pairs (Aspinall 2010).

Population Trend

Population trend is unknown.

Distribution Map



Barn Owl *(Tyto alba)*

Threats

Although there have been no reports of population declines, it is thought that numbers suffer due to habitat alteration and destruction. The species may suffer persecution as it is considered as bad omen.

Conservation Actions Underway

The species would benefit from the conservation of natural sites, some sites with Barn owl already present in some of the 13 terrestrial protected areas in Abu Dhabi. Increased awareness and more species-specific research and monitoring are already being undertaken in the emirate. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Black-crowned Night Heron *(Nycticorax nycticorax)*

VU

Local Red List Assessment Category:
Vulnerable° D1

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

The number mature individuals of *Nycticorax nycticorax* in Abu Dhabi Emirate is estimated to be around 70-100. The species has restricted distribution, but there is no evidence of fragmentation, reduction, and fluctuation, thereby, the species meets the criteria of EN. As it is a predominantly winter visitor to Abu Dhabi Emirate and has been recorded breeding recently with no threat outside the emirate, as the conditions outside the region area not deteriorating and the breeding population could rescue the regional population, it is down listed from Endangered (EN) to Vulnerable (VU).

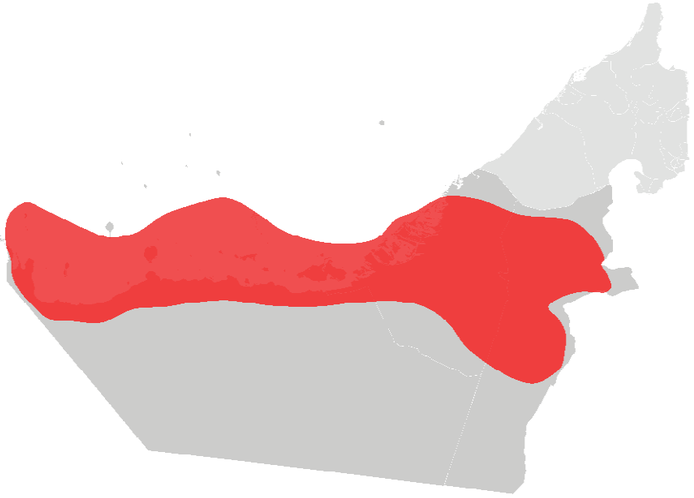
Distribution

The species is recorded in areas with small water-bodies and along the coast, near islands and newly created inland wetlands. Its distribution extends along most of the coastline and inland near Abu Dhabi and Al Ain.

Population

An estimated 50-100 mature individuals may be present across all sites in Abu Dhabi Emirate.

Distribution Map



Black-crowned Night Heron *(Nycticorax nycticorax)*

Population Trend

Population trend is unknown.

Threats

No specific threats to the species has been identified in Abu Dhabi but the species is susceptible to the transformation of wetlands by destruction, infilling, pollution or by recreational use in Abu Dhabi.

Conservation Actions Underway

The species would benefit from the conservation of natural sites. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Little Grebe
(Tachybaptus ruficollis)

VU

Local Red List Assessment Category:
Vulnerable D1

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Tachybaptus ruficollis has a small breeding population with number of mature individuals < 1,000 in Abu Dhabi Emirate and therefore it qualifies to be listed as Vulnerable. The population is possibly a mix of breeding as well as migrants so the species is neither up-listed nor down-listed during the assessment.

Distribution

The species is found in areas near the coast and well vegetated water-bodies that are inland in Abu Dhabi and Al Ain.

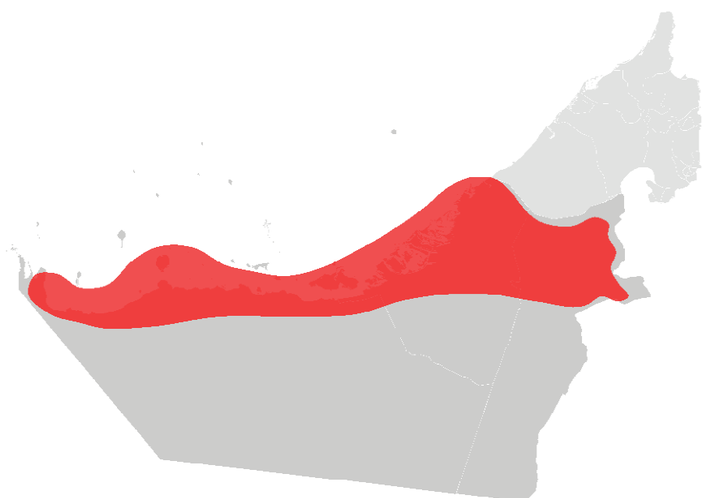
Population

The species is found throughout Abu Dhabi, Al Ain and Al Dhafra regions. An estimated 500-1,000 individuals may be present across all sites in Abu Dhabi Emirate and is recorded largely from inland wetlands. The species a resident breeding bird and the numbers of the resident population is further augmented by winter migrants.

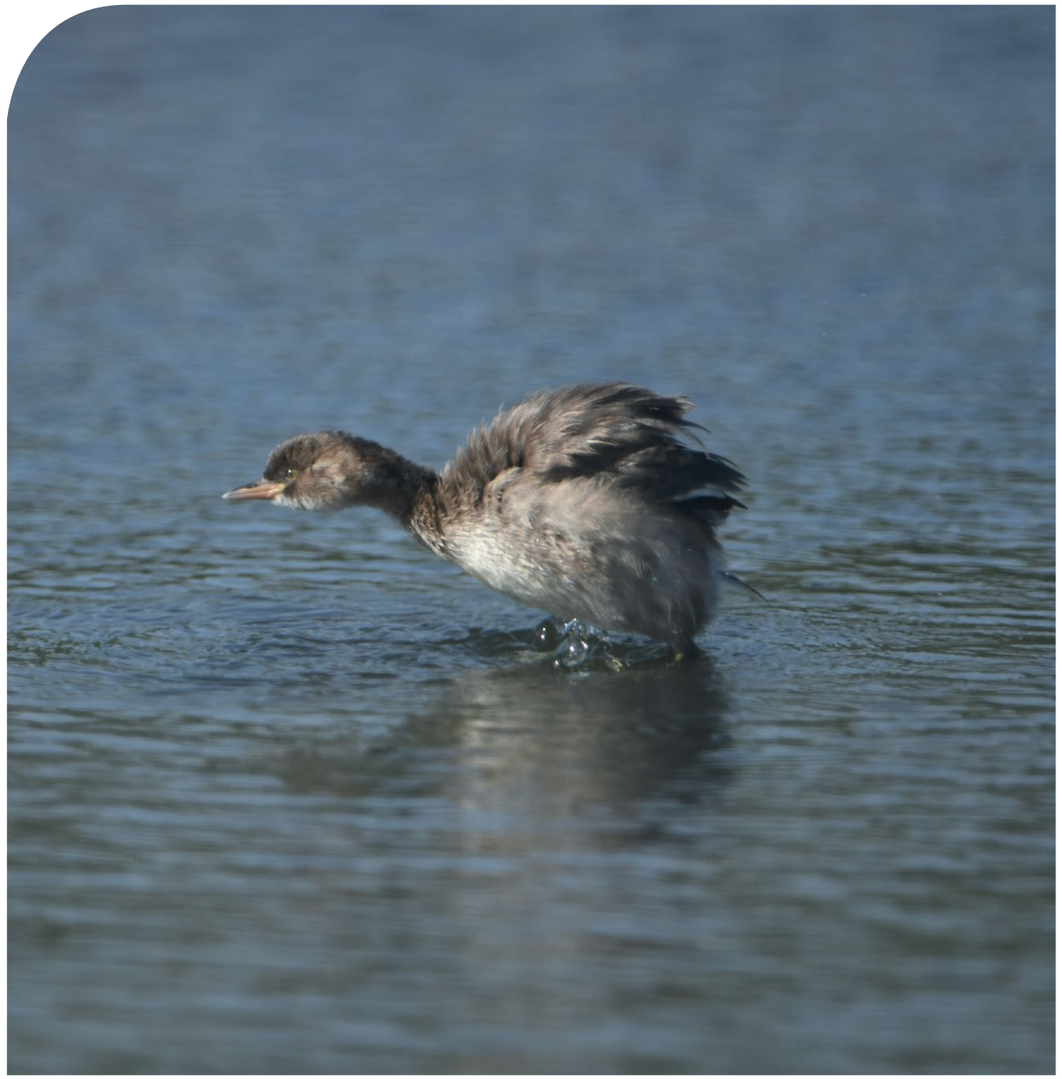
Population Trend

Population trend is unknown.

Distribution Map



Little Grebe *(Tachybaptus ruficollis)*



Threats

No specific threats to the species has been identified in Abu Dhabi but the species is susceptible to the transformation of wetlands by destruction, infilling, pollution or by recreational use in Abu Dhabi.

Conservation Actions Underway

The species is protected under Federal law number 24 of 1999. Establishment of various protected area would ensure conservation of suitable habitat and to prevent disturbance. Systematic monitoring of the species, within and outside protected areas is being undertaken by EAD.

Black-Necked Grebe
(Podiceps nigricollis)

VU

Local Red List Assessment Category:
Vulnerable° D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Podiceps nigricollis based on a small number of mature individuals <250 meets the criteria to be listed under the Endangered category. The species is a winter migrant to Abu Dhabi and has been recorded mostly in inland wetlands and shallow coastal areas. Being a visiting population to the region with no apparent threats outside the region, the species was down-listed from Endangered (EN) to Vulnerable (VU).

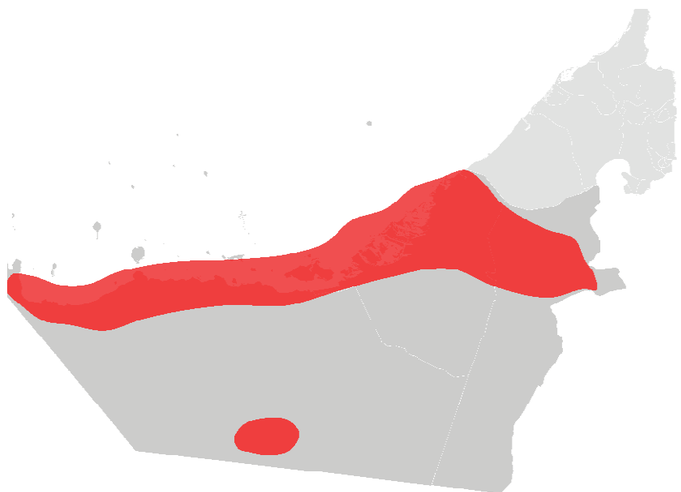
Distribution

The species is found in areas near the coast and well vegetated fresh water pools that are inland in Abu Dhabi and Al Ain.

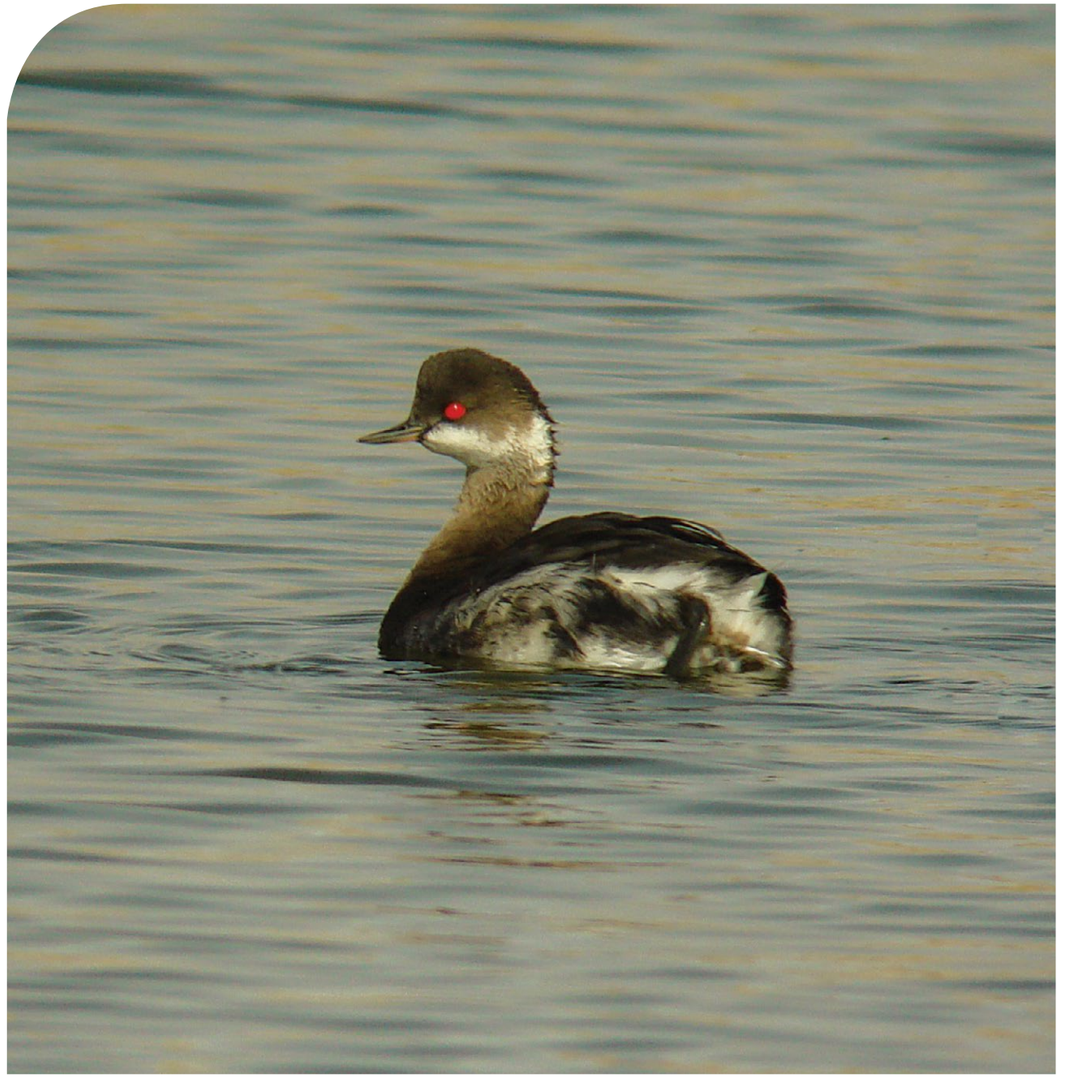
Population

An estimated 50-100 individuals may be present across all sites in Abu Dhabi Emirate.

Distribution Map



Black-Necked Grebe *(Podiceps nigricollis)*



Population Trend

Population trend is increasing.

Threats

No specific threats to the species has been identified in Abu Dhabi but the species is susceptible to the transformation of wetlands by destruction, infilling, pollution or by recreational use in Abu Dhabi.

Conservation Actions Underway

The species would benefit from the conservation of natural sites. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species.

Black-tailed Godwit
(Limosa limosa)

VU

Local Red List Assessment Category:
Vulnerable D1

Global Red List Assessment:
2016 Near threatened (NT)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Limosa limosa is recorded in small numbers in the inland wetlands and shallow coastal areas of Abu Dhabi. Based on a population of 300-500 individuals, and a small geographic range, with an AOO of 200 km^2 which is declining in quality due to disturbance along the shores of Abu Dhabi and habitat destruction.

As the species is a winter migrant to the region and conditions of habitat are deteriorating outside as well as inside the region, the species is categorised as Vulnerable (VU).

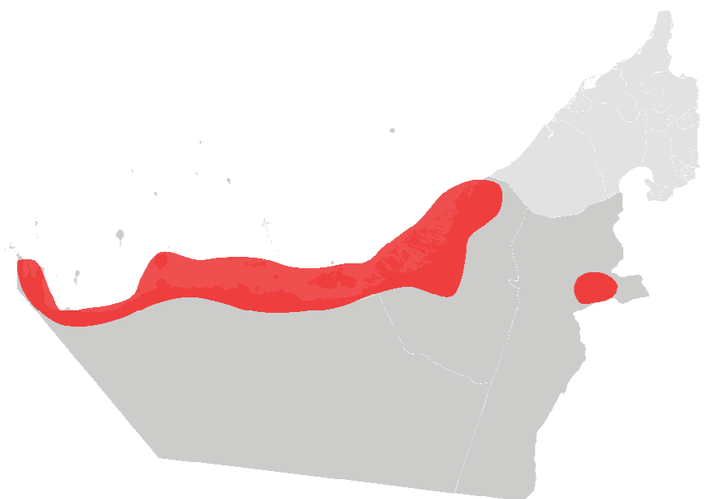
Distribution

The species is extensively distributed along mudflats, sandy beaches, estuaries and inland wetlands. It is distributed along coastal areas and islands all over the emirate. It is also recorded in inland wetlands.

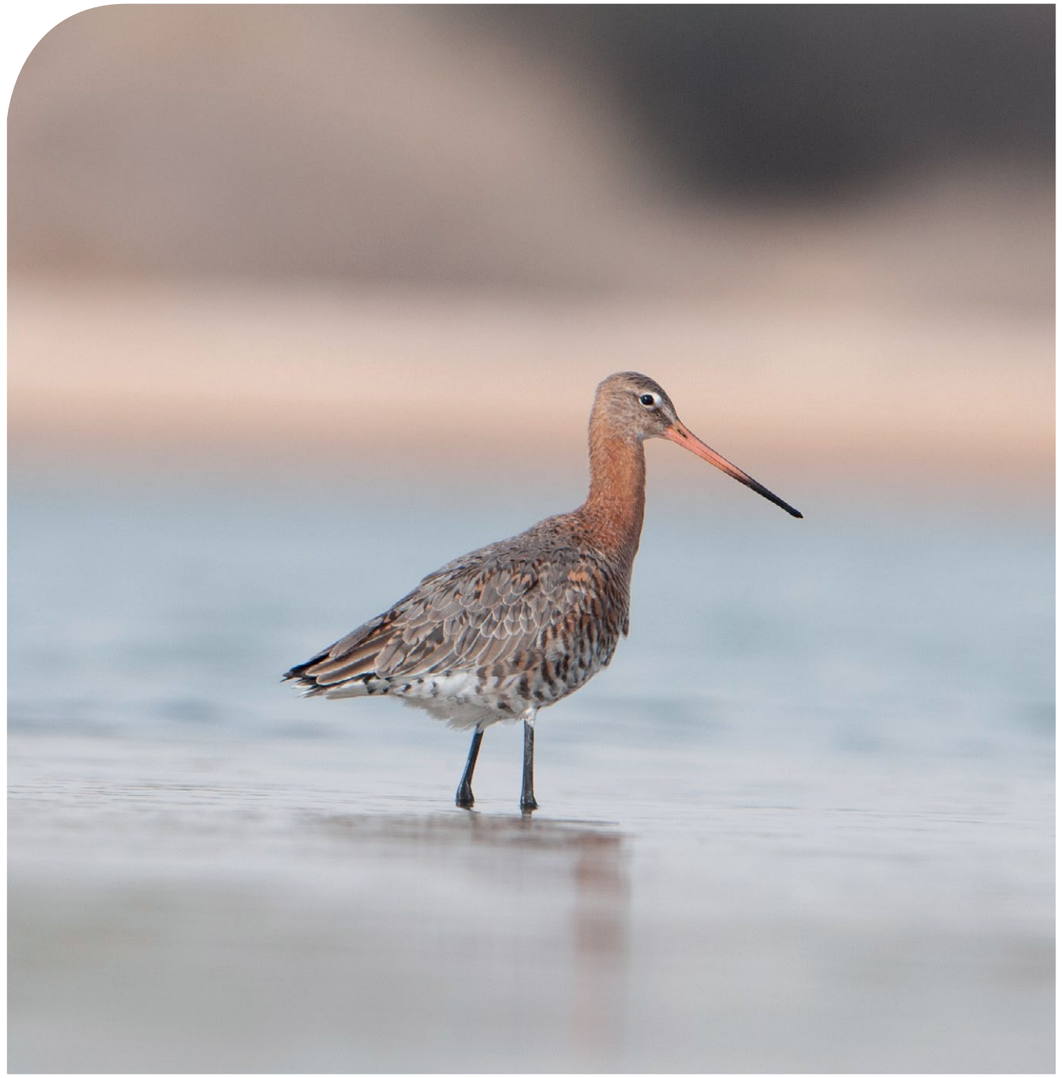
Population

An estimated 300-500 individuals.

Distribution Map



Black-tailed Godwit *(Limosa limosa)*



Population Trend

Population trend is unknown.

Threats

Loss of coastal habitats in particular, tidal mudflats.

Conservation Actions Underway

The species would benefit from the conservation of natural sites. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Northern Pintail
(Anas acuta)

VU

Local Red List Assessment Category:
Vulnerable° D1

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Anas acuta has a small population <250 mature individuals in Abu Dhabi Emirate. It is recorded during winter and is relatively abundant and is regularly recorded from inland wetlands sites across Abu Dhabi Emirate. The species is migratory and there is potentially high rescue effect from individuals outside of the region. This being a visiting population with no threat outside the region therefore and based on small population it is down-listed from Endangered (EN) to Vulnerable (VU).

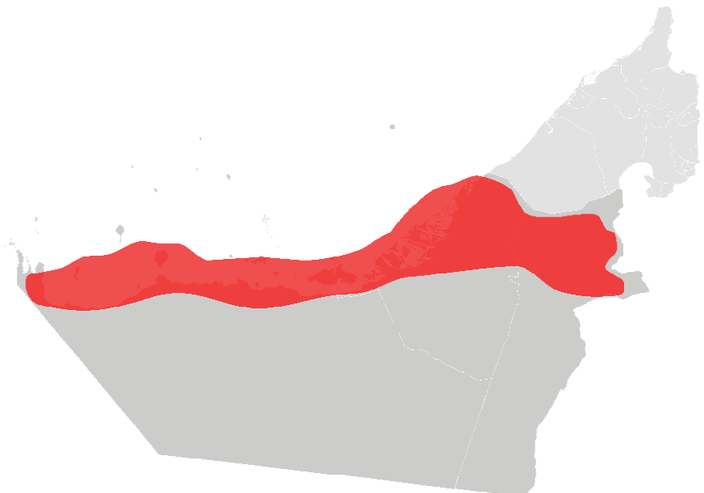
Distribution

The species is recorded all along the coastal areas in sheltered coasts and estuaries and shallow inland waters from the south-east to the western areas of the emirate.

Population

Estimated to be nearly 75-100 mature individuals from several sites across Abu Dhabi and Al Ain regions. During the winter months, it is found in areas associated with water – mainly inland wetlands and sewage treatment plants (treated water areas).

Distribution Map



Northern Pintail *(Anas acuta)*

Population Trend

Population trend is unknown.

Threats

The most relevant threats within Abu Dhabi are modification in coastal land-use and the possibility of oil pollution. Furthermore, wetland habitat loss and reclamation of coastal areas for industrial development could also be the threats but the severity of these threats towards this species is unknown.

Conservation Actions Underway

The species is protected under Federal Law 24 of 1999. It is AEWA listed species, CMS Appendix II, EU Birds Directive Annex II and III. The establishment of various protected areas would ensure conservation of suitable habitat and to prevent disturbance. Systematic monitoring of the species along with other avifauna, within and outside protected areas is being undertaken by EAD.

Asian Houbara
(Chlamydotis macqueenii)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2016 Vulnerable (VU)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Chlamydotis macqueeni is globally threatened and the population is declining. There is also an uncertainty over whether any of the released individuals in UAE have fulfilled the requirements for acceptance as 'wild' under IUCN guidelines, and the confusion also covers any wild population estimates within the country. We assessed the species based on small population size <250 mature individuals and it qualifies to be listed as Endangered (EN).

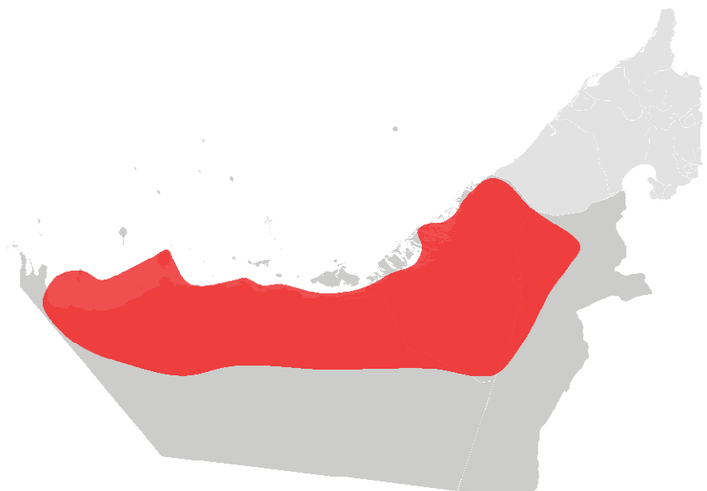
Distribution

The species is recorded in stony or sandy steppes, semi-desert in areas of low dunes from Al Ain to Al Dhafra regions.

Population

Wild Population not exactly known in Abu Dhabi Emirate, however small wintering or on passage migrants have been reported from some areas. Estimation of exact numbers of wild wintering birds is difficult, and it is suspected to be small with an estimated 50-75 individuals present during the winter season. The exact numbers of wild birds estimation is compounded by the fact that captive bred birds have been released in the emirate, some even without tags.

Distribution Map



Asian Houbara *(Chlamydotis macqueenii)*

Population Trend

Population trend is unknown.

Threats

All the global threats to the species are likely to be relevant the species's current status within Abu Dhabi, as they may have contributed to its disappearance as a natural breeding species within the country, and may continue to impact individuals that visit the country during the non-breeding season. Within Abu Dhabi, disturbance to the habitat from development and unsustainable hunting could be one of the major threats to the species but the severity of the threats to the species are unknown.

Conservation Actions Underway

In the UAE, this species is protected under Federal law number 24 of 1999. Additionally the species is listed in CITES Appendix I and CMS Appendix II. Protected areas have been established for the conservation of the species. Moreover, captive breeding is being undertaken at large scale to provide birds for hunting (IFHC 2019) and currently over 50,000 Houbara have been raised in captivity and released across its range. A network of terrestrial protected areas have been established in the emirate, some specifically to protect wintering as well as released Houbara. The species is also included in EAD's education and awareness programme for important and endangered species.

Bonelli's Eagle
(Aquila fasciata)

EN

Local Red List Assessment Category:
Endangered° D

Global Red List Assessment:
2016 Least concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Aquila fasciata is a rare resident and a fairly common winter visitor. Based on the number of mature individuals the species is categorised as Critically Endangered (CR). It should be noted that its geographical range in the form of AOO is small. As the local breeding population experiences immigration from wintering population, which is not going to change or decrease, accordingly the species is down-listed from as Critically Endangered (CR) to Endangered (EN).

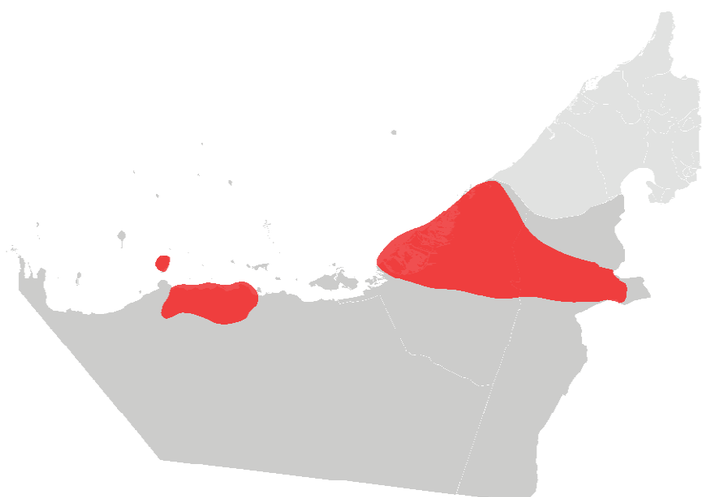
Distribution

The species is a rare resident breeding bird and the nominate race is also represented by wintering population. Reported from Abu Dhabi, Al Ain and Al Dhafra regions, however most sightings are confined to Al Ain region, largely around Jabal Hafit.

Population

Estimated to be in the range of 5-10 mature birds from all the sites in the emirate as it's not very common and only few individuals are seen.

Distribution Map



Bonelli's Eagle *(Aquila fasciata)*

Population Trend

Population trend is unknown.

Threats

Local threats to the species are unknown.

Conservation Actions Underway

The species is protected under Federal law number 24 of 1999 and Local Law 22 of 2005. It is also listed on the CITES Appendix II.

Jabal Hafit has small breeding population and establishment of the Jabal Hafit Protected area possibly helped the species and the small population at site, however prevention of disturbance and awareness are considered important activities for protection of the species.

Socotra Cormorant
(Phalacrocorax nigrogularis)

EN

Local Red List Assessment Category:
Endangered B2ab(iii)c(i,ii,iii,iv)

Global Red List Assessment:
2018 Vulnerable (VU)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

The species is a local resident in Abu Dhabi Emirate. It is experiencing declines and deterioration of the conditions through its global range. The species qualifies to be listed as Endangered (EN) based on severely fragmented and extreme fluctuations in EOO & AOO, number of locations and number of mature Individuals.

Distribution

The species has widespread distribution in the marine areas of the emirate in non-breeding season and breeds mainly on few offshore islands; however breeding is limited to 4-5 key offshore islands.

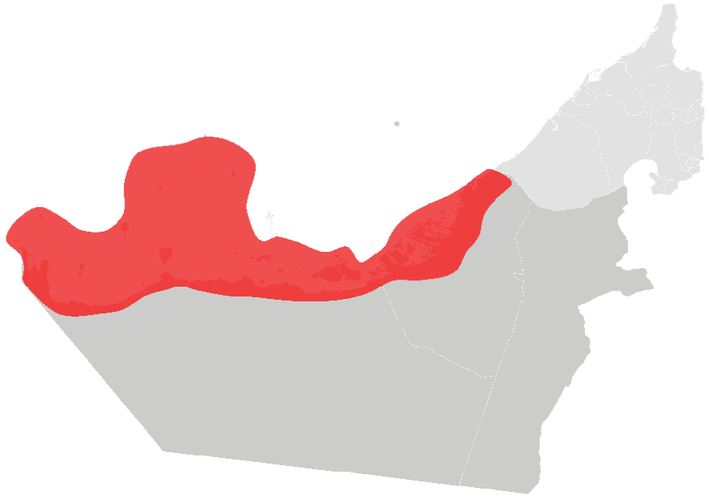
Population

The current breeding population of the species in Abu Dhabi is around 55,000 breeding pairs from five offshore island sites in the emirate; however, these numbers fluctuate every year. The numbers decreased from 2004-2011 and increased from 2011-2016 (possibly attributed to colonies shifting from neighbouring areas).

Population Trend

Population trend is stable.

Distribution Map



Socotra Cormorant *(Phalacrocorax nigrogularisi)*

Threats

Coastal development on breeding islands is possibly the greatest threat to the species with detrimental effects. Egg collection during the breeding season has been one of the major threats to the species. Frequent human disturbance flushes parenting birds from nests, resulting in widespread egg and chick predation by gulls. Furthermore, persecution and hunting at the breeding sites are also the threats.

Conservation Actions Underway

The species is listed in CMS Appendix II and protected under Federal law number 24 of 1999. EAD has been regularly monitoring breeding population and will continue to monitor the breeding sites. Specific conservation measures have been proposed, including the protection of some breeding sites. The species is also included in EAD's education and awareness programme for important and endangered species.

Crab Plover
(Dromas ardeola)

VU

Local Red List Assessment Category:
Vulnerable B1ab(iii)

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Dromas ardeola, based on its small number of locations, small area of occupancy < 20,000 km² and the decline in the quality of its habitat qualifies to be for listed as Vulnerable (VU). The breeding population is stable in Abu Dhabi, thus the regional adjustment was not applied.

Distribution

Outside the breeding season the species could be seen at key coastal sites throughout the emirate and during the breeding season the species is restricted to two islands in Abu Dhabi Emirate.

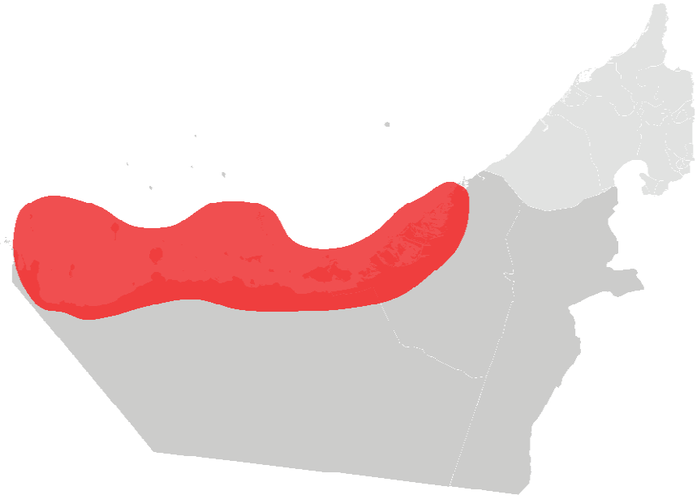
Population

On an average 1,300 - 1,500, breeding pairs (approximately 3,000 mature individuals) are known to breed on the two islands and the population seems to be stable with some inter-annual variations in numbers.

Population Trend

Breeding population is stable.

Distribution Map



Crab Plover *(Dromas ardeola)*

Threats

The species is restricted to only two islands during breeding period, of which the largest colony is on a privately owned island and remains vulnerable to development, anthropogenic activities and potential introduction of nest predators onto breeding islands.

Conservation Actions Underway

The species is protected under the Federal Law 24 of 1999 and is also listed in the CMS Appendix II. The species is relatively well protected at Abu Al Abyad, which supports 90% of the breeding population in the UAE. The other nesting site, Umm Amim is part of the Marawah Marine Biosphere Reserve and is well protected. Annual breeding assessments have been undertaken by EAD since 2002 and will continue to be monitored.

Cream-colored Courser
(Cursorius cursor)

CR

Local Red List Assessment Category:
Critically Endangered C2a(i); D

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

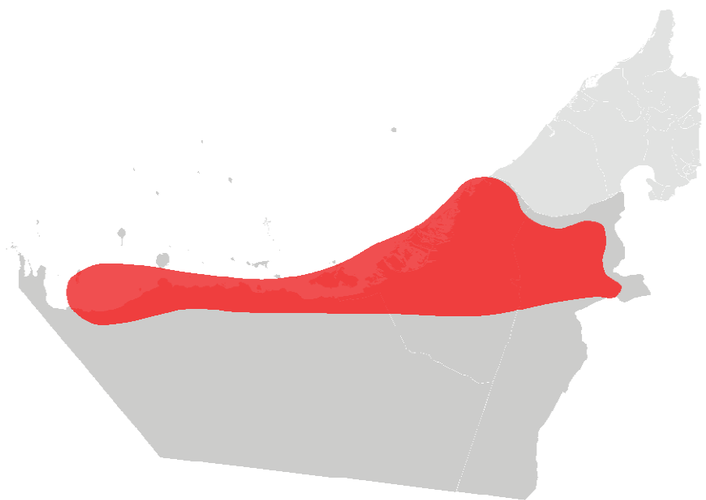
Rationale

Cursorius cursor is a resident breeder and some birds migrate during winter. At sites where the species is recorded it is not seen in large numbers. There has also been an ongoing significant reduction in population due to alteration of habitat as the species depends upon low dune sparse vegetation habitat. A population of 200 pairs was estimated for the whole UAE in the1990's which has undergone decline due to habitat alterations. There are an estimated 200 individuals, with an inferred decline that is continuing. Thus based on the most probable number of mature individuals, it is listed preliminarily under Critically Endangered (CR). As conditions are not favourable for the species in terms of habitat changes and loss and the migrant population is not very large to effect numbers to a large extent, thus the category does not change.

Distribution

The species is mostly recorded in stony semi-desert areas and desert with scanty vegetation of Abu Dhabi. It is mostly seen between Abu Dhabi to Al Ain truck road and Dubai to Al Ain road.

Distribution Map



Cream-colored Courser *(Cursorius cursor)*

Population

Current population is estimated to be less than 200 mature individuals. Nearly 100 breeding pairs were estimated in 1997 from all the sites in the emirate.

Population Trend

Population trend is decreasing.

Threats

Destruction and alteration to breeding habitat is the foremost threat to the species which mostly include the irreversible conversion of suitable habitat for development. Disturbance in the form of people's presence is detrimental during breeding.

Conservation Actions Underway

The species is protected under Federal Law 24 of 1999. Establishment of various protected area would ensure conservation of suitable habitat and to prevent disturbance.

Pharaoh Eagle-Owl
(Bubo ascalaphus)

CR

Local Red List Assessment Category:
Critically Endangered C2a(i); D

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Bubo ascalaphus is an uncommon to fairly common breeding resident with very low numbers seen. The population is under threat from habitat alteration and disturbance. There are significant threats to the habitat which are increasing. The species being a breeding resident does not receive any immigrants as migrants and therefore it is categorises as Critically Endangered (CR).

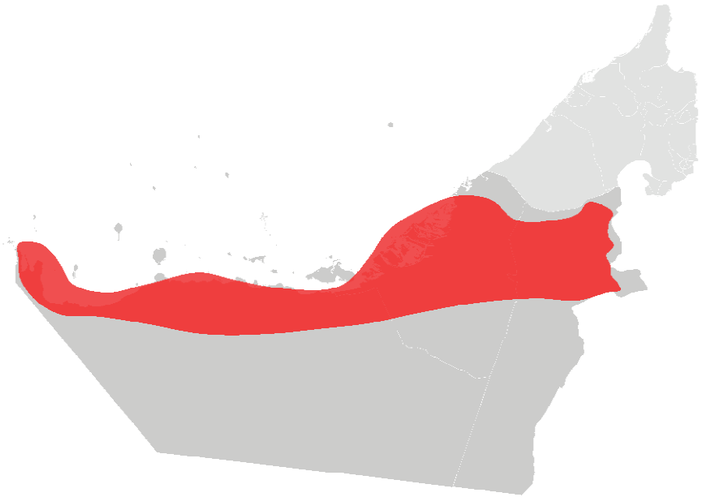
Distribution

The species is widespread, in varied habitat types such as mountains, areas with crags and rocky outcrops and sandy desert with large trees and bushes. The species is distributed from the south-east to the western most areas of the emirate.

Population

Estimated to be nearly 50-60 mature individuals which form 10-20 breeding pairs from all the sites in the emirate. The species is an uncommon to fairly common breeding resident with very low numbers.

Distribution Map



Pharaoh Eagle-Owl *(Bubo ascalaphus)*

Population Trend

Population trend is decreasing.

Threats

Destruction and alteration to breeding habitat is the foremost threat to the species which mostly include the irreversible conversion of suitable habitat for development. Disturbance in the form of people's presence is detrimental during breeding. Extensive use of rodenticide causes declines in the species prey base.

Conservation Actions Underway

The species is protected under Federal Law 24 of 1999. Establishment of various protected area would ensure conservation of suitable habitats and to prevent disturbance. Systematic monitoring of the species, within and outside protected areas is being undertaken. The species is also included in EAD's education and awareness programme for important and endangered species.

Egyptian Vulture
(Neophron percnopterus)

CR

Local Red List Assessment Category:
Critically Endangered C1+2a(i,ii); D

Global Red List Assessment:
2016 Endangered (EN)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Neophron percnopterus has a very small population size <50 mature individuals and its population trend is decreasing. The species is a breeding resident, rarely observed away from Jabal Hafit, Al Ain; possibly also rare migrant. The number of birds recorded has declined over the years and the reduction is more than 50% in three generations. Also, its geographical range both in the form of EOO and AOO is very small.

As the Egyptian Vulture is a resident (potential breeding) species in Abu Dhabi Emirate and localised only to one site in Al Ain region and hence the final category would not change and remain as Critically Endangered (CR).

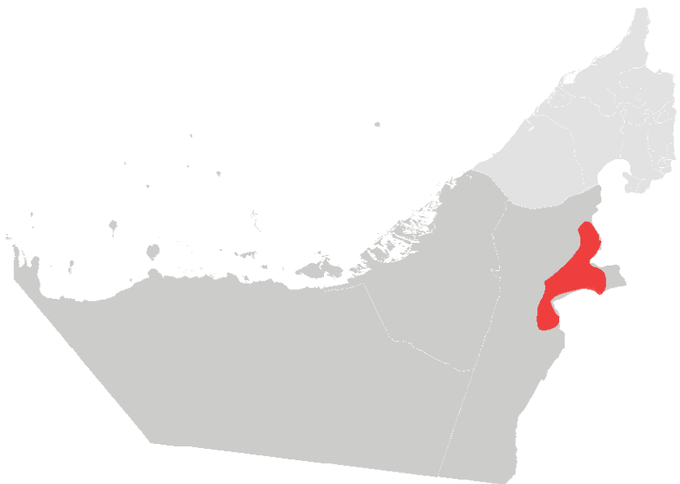
Distribution

The species has localised distribution in Jabal Hafit mountain in Al Ain, where the species breeds. Seen as far as Qasr al Sarab when birds are looking for food.

Population

Estimated to be nearly 50-60 mature individuals which form 10-20 breeding pairs from all the sites in the emirate. The species is an uncommon to fairly common breeding resident with very low numbers.

Distribution Map



Egyptian Vulture *(Neophron percnopterus)*

Population Trend

Population trend is decreasing.

Threats

The main threats are possible poisoning of livestock that is mainly used as bait against fox and a general issue with food availability.

Conservation Actions Underway

The species is protected under Federal Law 24 of 1999. Establishment of Jabal Hafit protected area has ensured conservation of suitable habitat. Other conservation efforts underway are awareness and education, satellite tagging / research / camera trapping. Five individuals have been tagged and satellite tracked by EAD. Camera traps have been set up in areas where food was provisioned on an experimental basis. Conservation action plan is also being developed as part of multi species action plan under CMS.

Eurasian Spoonbill
(Platalea leucorodia)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2016 Least concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Although the species has a visiting population this species is categorised as Endangered (EN) due to the vulnerability and threats to coastal wetlands habitats.

Rationale

Eurasian Spoonbill is seen in inland wetland and coastal mudflats of the region with numbers up to a combined higher estimate of 100 individuals with each population of not more than 40 individuals. They are a winter migrant to the region with some overwintering flocks.

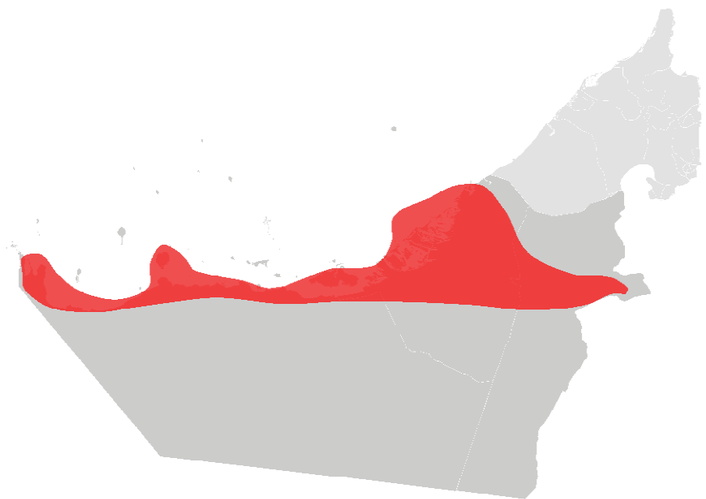
Distribution

The species is largely reported from inland wetland sites in Abu Dhabi, Al Ain and there are a few records of a single bird in Sir Baniyas Island in Al Dhafra region. Small groups of birds are recorded regularly in Bul Syayeef and Mangrove National parks.

Population

Estimated to be nearly 50-60 mature individuals which form 10-20 breeding pairs from all the sites in the emirate. The species is an uncommon to fairly common breeding resident with very low numbers.

Distribution Map



Eurasian Spoonbill *(Platalea leucorodia)*

Population Trend

Population trend is unknown.

Threats

The main threats are loss of coastal habitats in particular and the tidal mudflats.

Conservation Actions Underway

The species is well protected under Federal Law 24 of 1999 and is listed in Appendix II of CITES and Annex II of the Convention on Migratory Species. It also benefits from the network of protected areas covering coastal and inland wetlands, especially Bul Syayeef.

Ferruginous Duck
(Aythya nyroca)

VU

Local Red List Assessment Category:
Vulnerable D1

Global Red List Assessment:
2017 Near threatened (NT)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Aythya nyroca is a winter migrant to inland wetlands and is mostly recorded in the newly formed sewage treatment plants in very low numbers. The cumulative numbers are not more than 200-300 in a season. Two inland wetlands of Al Wathba and Zakher have most of these birds. Based on the small numbers, the species meets the criteria to be considered as Vulnerable. Also, its geographical range is very small, both in the form of EOO and AOO.

However, as the species is a winter migrant and has a small visiting population that faces threats outside the region with no rescue effect, the category remains as Vulnerable (VU).

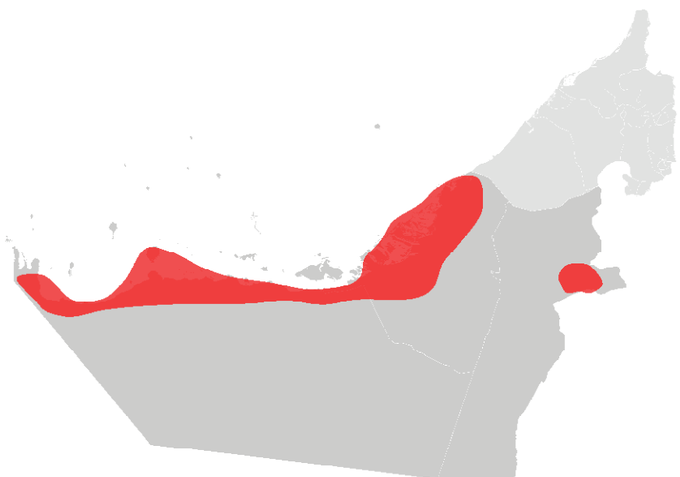
Distribution

The species is mostly recorded from shallow and well vegetated wetlands from 15-20 sites across Abu Dhabi, Al Ain and Al Dhafra regions. The species however is more abundant in Zakher lake and Al Wathba Wetland Reserve.

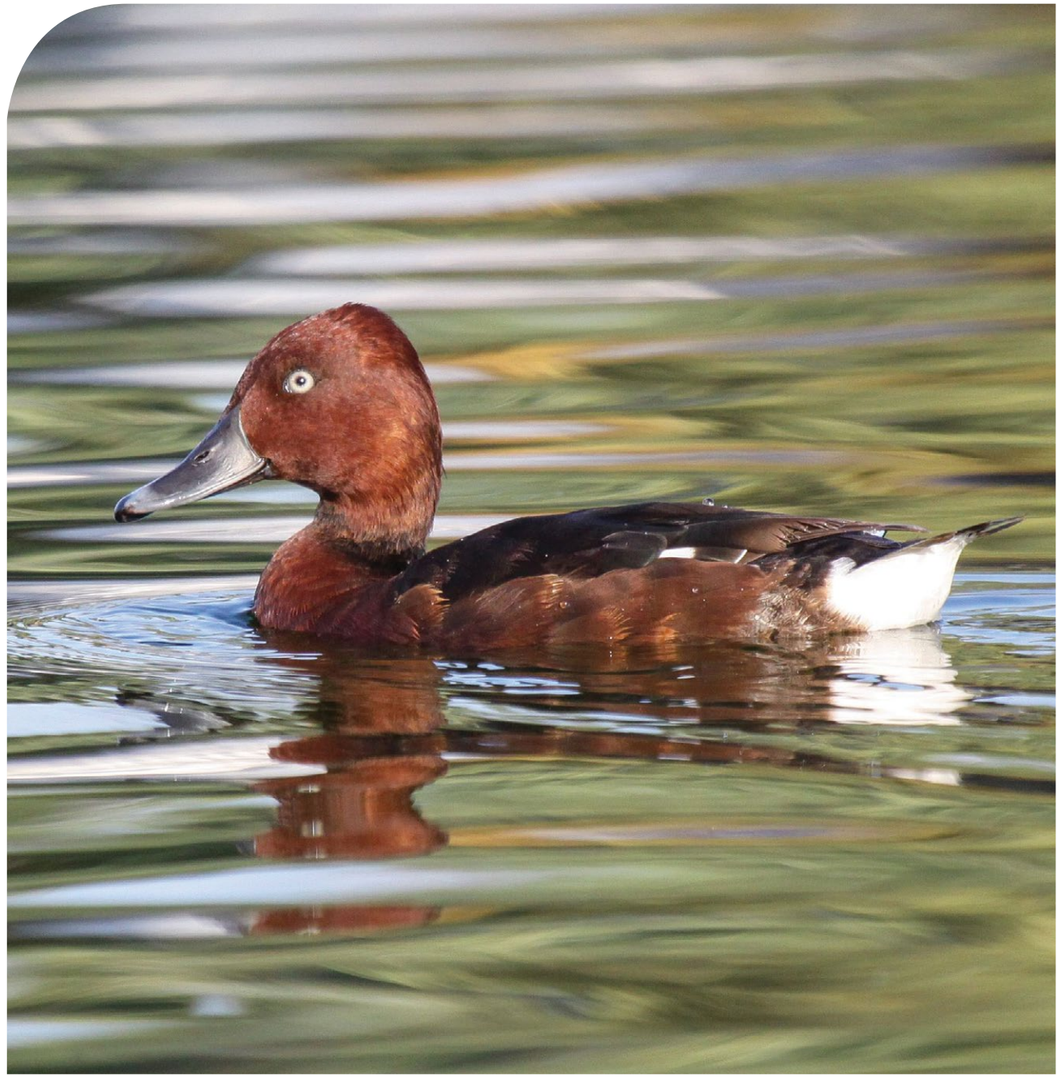
Population

Estimated 200-300 mature individuals could be seen across the emirate.

Distribution Map



Ferrugineous Duck *(Aythya nyroca)*



Population Trend

Population trend is unknown.

Threats

There is no apparent threat for the species in the emirate.

Conservation Actions Underway

The species is well protected under Federal Law 24 of 1999 and is listed in Annex of the Convention on Migratory Species. It also benefits from the network of protected areas in the emirate.

Gadwall
(Mareca strepera)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2016 Least concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Mareca strepera is a winter migrant to the region that is recorded in very low numbers that justifies being classified as Critically Endangered. It also should be noted that its geographic range is very small, both in the form of AOO and EOO.

However as the species is a winter migrant and has the visiting population potential which can rescue the local population, with the result, the species is Endangered (EN).

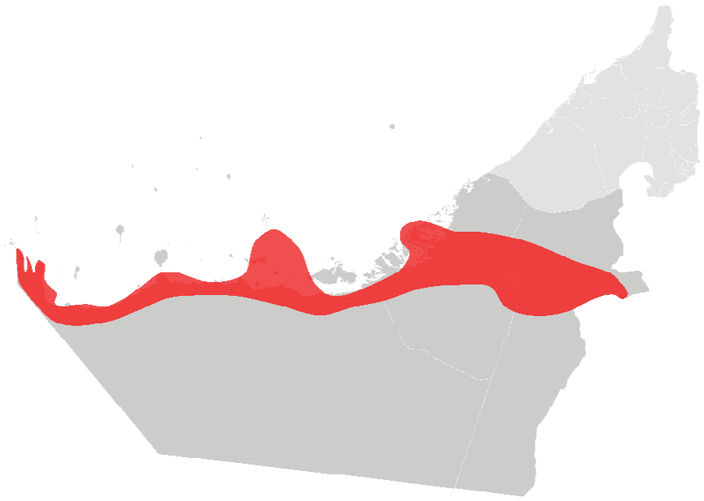
Distribution

The species is regularly recorded from key inland wetlands, mangroves and coastal sites in the emirate. These includes sites in the south in Al Ain and Al Dhafra .

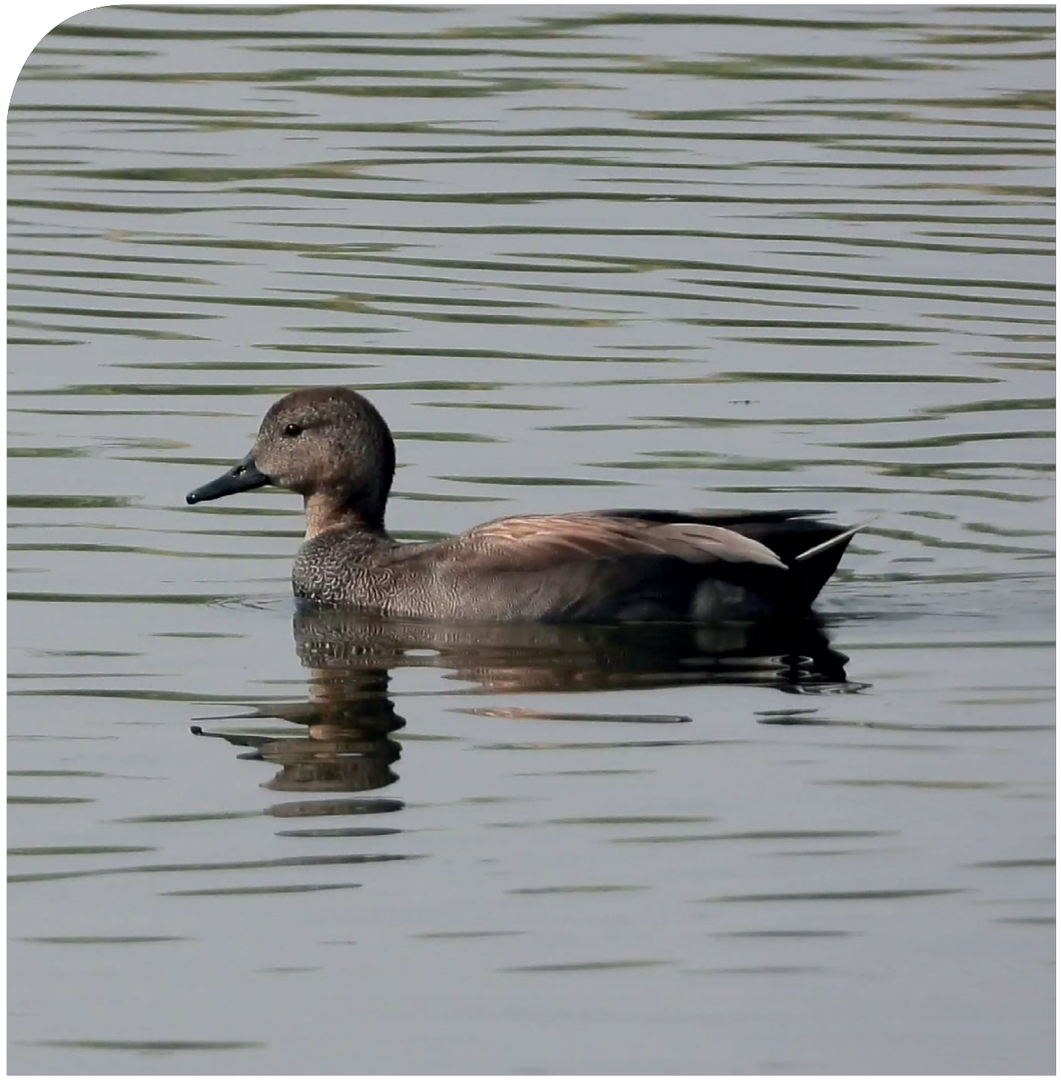
Population

An estimated 20-30 individuals recorded from several sites across Abu Dhabi, with largest concentration in Al Wathba, where on an average up to 10-15 individuals have been seen recently.

Distribution Map



Gadwall *(Mareca strepera)*



Population Trend

Population trend is unknown.

Threats

There is no apparent threat for the species in the emirate although deterioration in the quality of coastal and inland wetlands will effect the species.

Conservation Actions Underway

The species is well protected under Federal Law 24 of 1999 and is listed in Annex II of the Convention on Migratory Species. It also benefits from the network of protected areas in the emirate.

Garganey
(Spatula querquedula)

VU

Local Red List Assessment Category:
Vulnerable° D

Global Red List Assessment:
2016 Least concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Spatula querquedula is a winter migrant to the region and small flocks are seen mostly in the inland wetlands and other habitats like Golf courses and near landscaped beeches. The total population in the region is under 100 individuals. Based on these numbers the species meets the criterion to be considered as Endangered. Its also noticeable that its geographical range is very small both in the form of EOO and AOO.

The species is a winter visitor to the region and does not face any threats in other regions of its distribution; as such the final category is Vulnerable (VU).

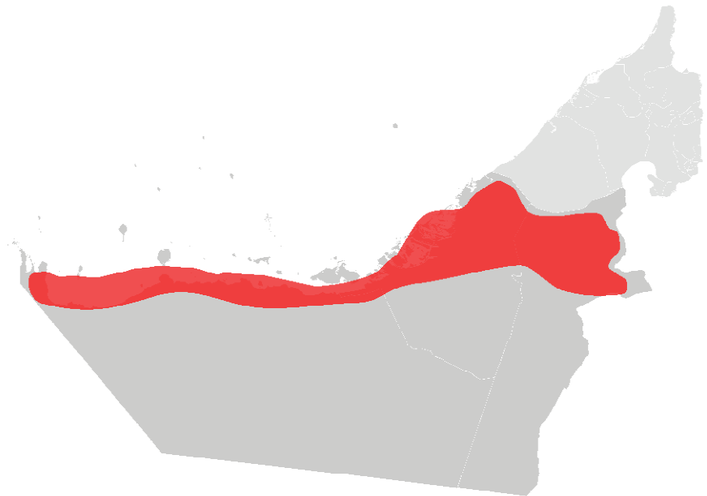
Distribution

The species is recorded from shallow coastal areas and estuaries in addition to fresh water and vegetated wetlands from sites in the south east to the western areas of the emirate.

Population

An estimated 75-100 mature individuals are recorded from several sites across Abu Dhabi. The species is recorded during winter and is regularly seen from 15-20 sites across emirate in small numbers ranging from 5-10 birds, however up to 20 individuals have been reported from sites in Abu Dhabi including Al Wathba Wetland Reserve.

Distribution Map



Garganey *(Spatula querquedula)*

Population Trend

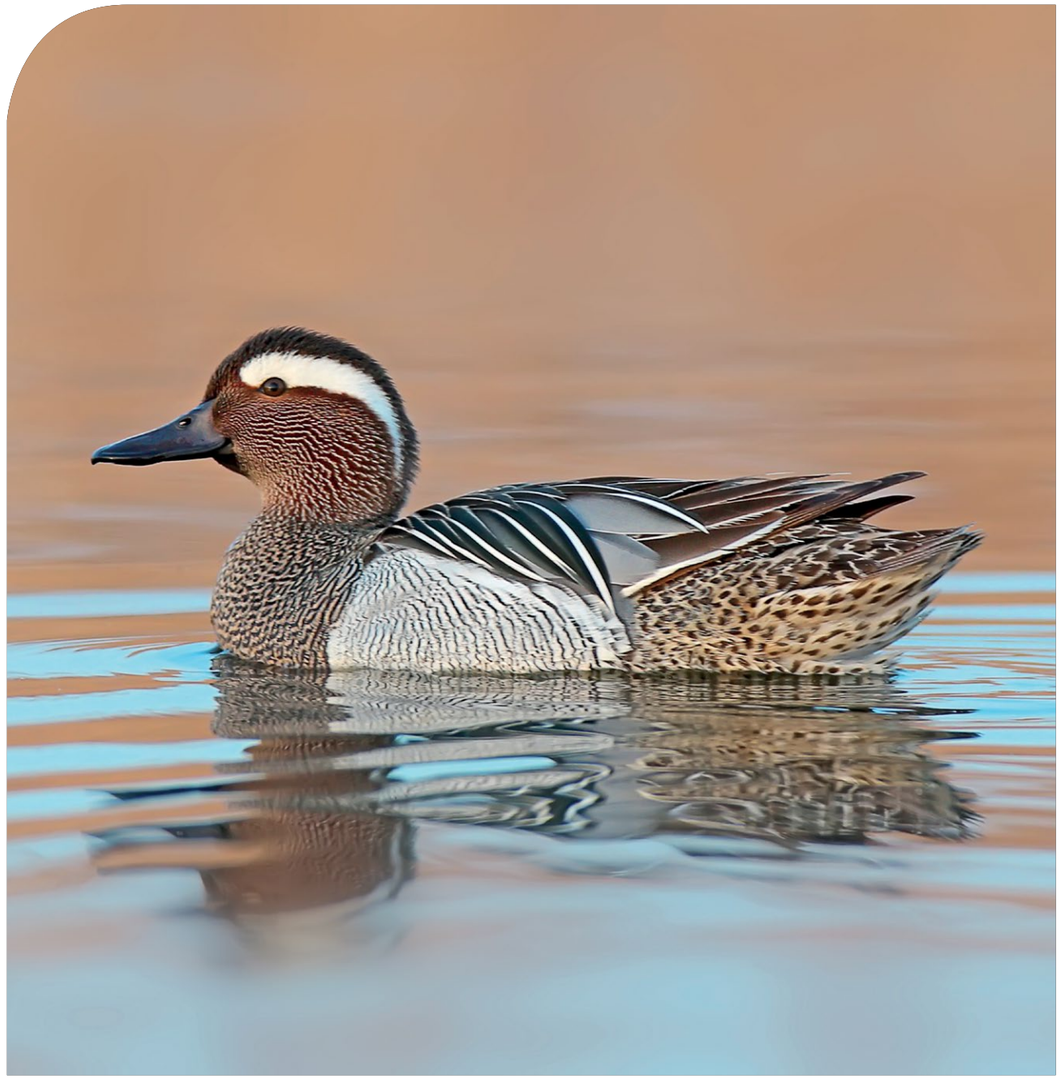
Population trend is unknown.

Threats

There is no apparent threat for the species in the emirate although deterioration in the quality of coastal and inland wetlands will effect the species.

Conservation Actions Underway

The species is protected under Federal Law 24 of 1999 and is listed in Annex II of the Convention on Migratory Species. It also benefits from the network of protected areas in the emirate.



Glossy Ibis
(Plegadis falcinellus)

VU

Local Red List Assessment Category:
Vulnerable° D

Global Red List Assessment:
2016 Least concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Plegadis falcinellus is a winter migrant to the region and small flocks are seen mostly in the inland wetlands. The total population in the region is less than 250 mature individuals, based on these numbers the species meets the criterion to be Endangered, which is the preliminary category for the species. It must be noticed that its geographical range is also small, both in the form of EOO and AOO.

The species is a winter visitor to the region and does not face any threats in other regions of its distribution, as such the final category is down-listed as Vulnerable (VU).

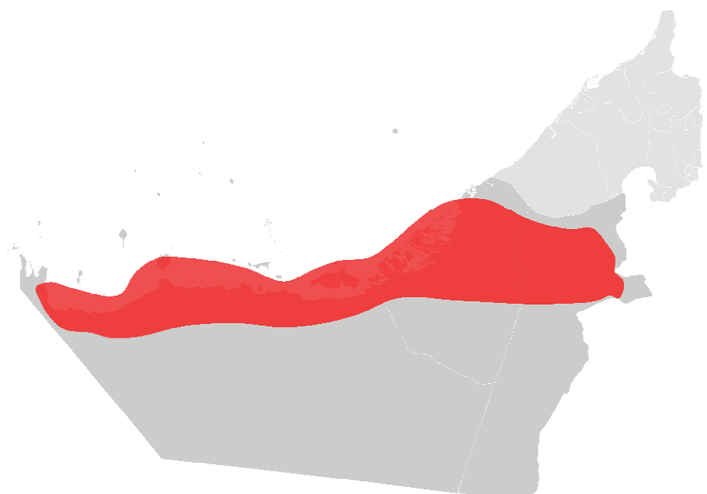
Distribution

The species is largely reported from inland wetland sites in Abu Dhabi, Al Ain and Al Dhafra region. Large proportion of the birds are recorded in Al Wathba and Zakher.

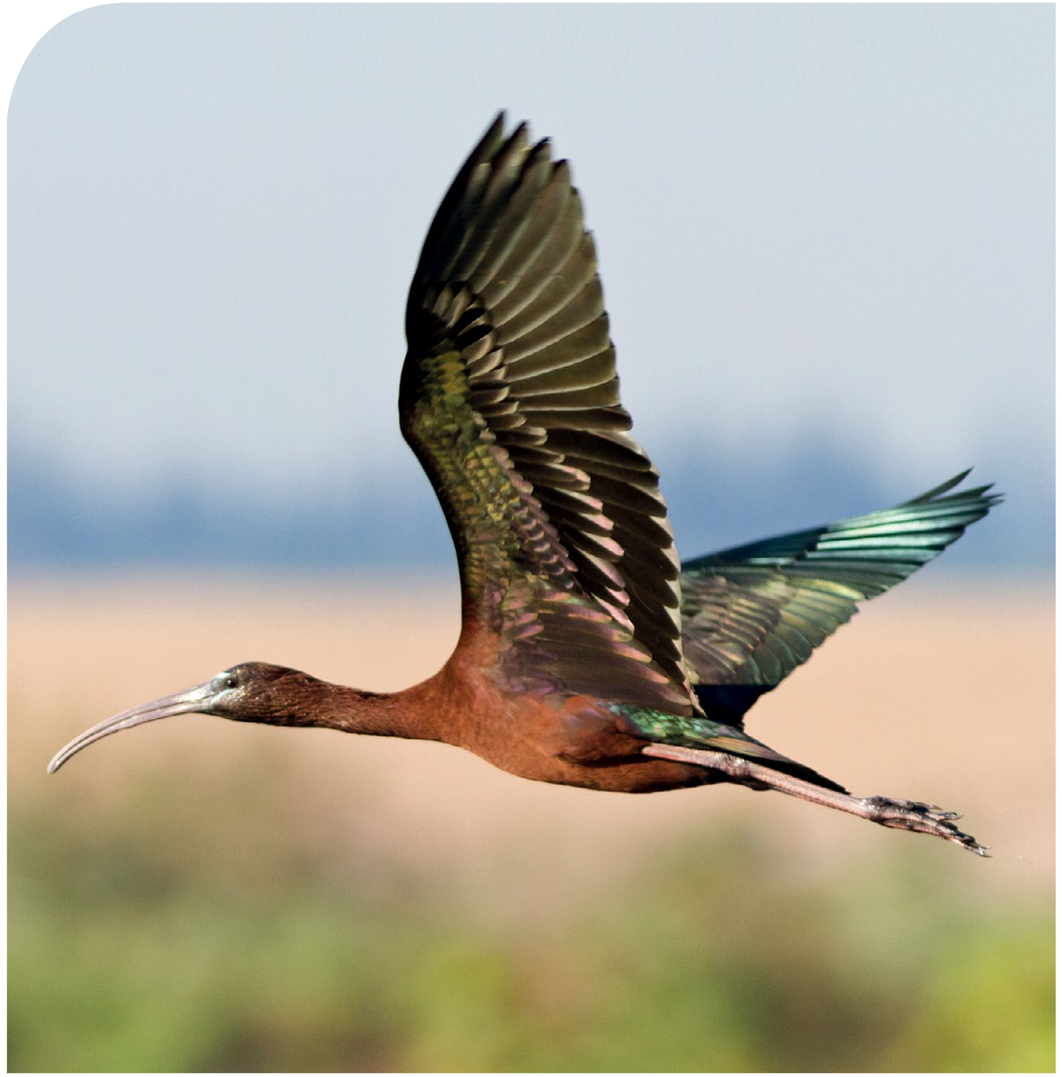
Population

An estimated 100-150 individuals may be present across all sites in Abu Dhabi Emirate and is recorded largely from inland wetlands.

Distribution Map



Glossy Ibis *(Plegadis falcinellus)*



Population Trend

Population trend is unknown.

Threats

There is no apparent threat for the species in the emirate although deterioration in the quality of coastal and inland wetlands will affect the species.

Conservation Actions Underway

The species is protected under Federal Law 24 of 1999 and is listed in Annex II of the Convention on Migratory Species. It also benefits from the network of protected areas in the emirate.

Great Knot
(Calidris tenuirostris)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2016 Endangered (EN)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Calidris tenuirostris has a very small population size <50 mature individuals in the emirate. Although the species is winter migrant and local population can have rescue effect, the species is not down listed due to the small and declining global population and hence the species is retained as Critically Endangered (CR).

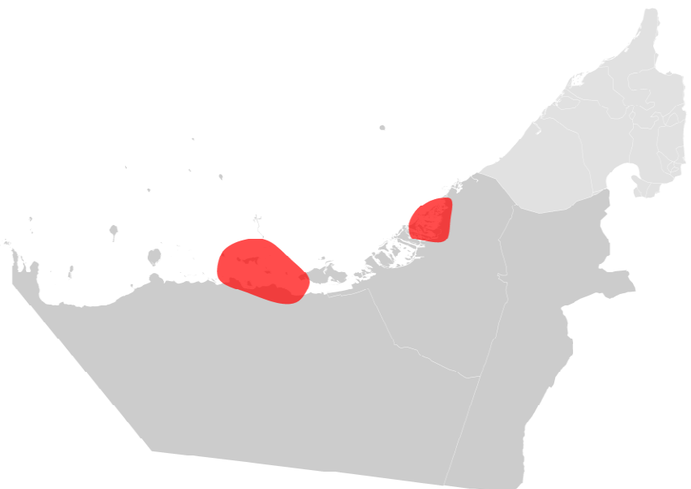
Distribution

The species is recorded from a few sites like Al Mirfa in Al Dhafra and Belghalam island and Jazirat Hayl in Abu Dhabi Emirate.

Population

The species is uncommon passage migrant and winter visitor to the emirate largely from August to April – however, the more recent sighting were recorded from Mirfa in Al Dhafra Region, Belghalam Island and Jazirat Hayl in Abu Dhabi Emirate. Furthermore, important coastal sites such as Marawah Island from where the largest numbers of Great Knots were reported. Furthermore, limited research made it very difficult to obtain accurate population figures. However, nearly 20-50 mature individuals may be present across 3-4 localities in Abu Dhabi.

Distribution Map



Great Knot *(Calidris tenuirostris)*

Population Trend

Population trend is unknown.

Threats

The species is listed on Appendix I of the Convention on the Conservation of Migratory Species (CMS) and specific threats to this species in Abu Dhabi are unknown.

Conservation Actions Underway

The species would benefit from the conservation of natural sites, such as Marawah island which is already a Marine Protected area in Abu Dhabi. Research and monitoring are already being undertaken in the emirate to gather population counts data. In addition, this species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Greater Spotted Eagle
(Clanga clanga)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2016 Vulnerable (VU)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Clanga clanga has a small population size of <50 mature individuals, therefore it is categorised as Critically Endangered (CR). Although the species is a winter visitor and local population can have rescue effect, the species is not down-listed due to the small and declining global population.

Distribution

The species is recorded from a few sites like Al Mirfa in Al Dhafra and Belghalam island and Jazirat Hayl in Abu Dhabi Emirate.

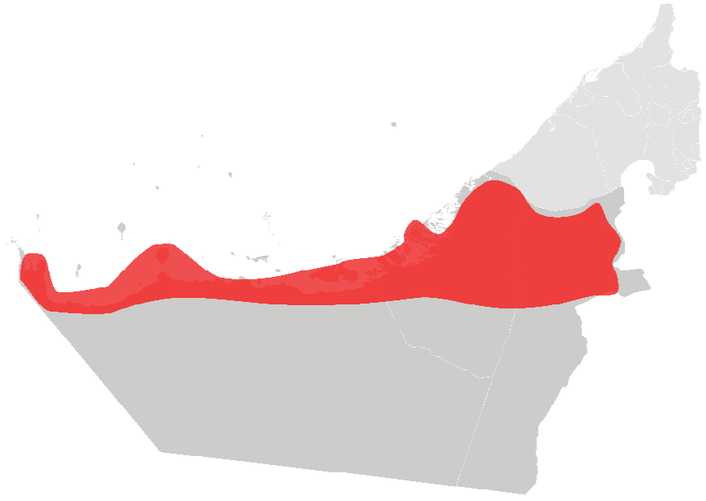
Population

The species is a passage and winter visitor to UAE; it is recorded around coastal areas from Al Dhafra Region and Abu Dhabi. It is also recorded near artificial fresh-water wetlands with abundant prey (small waterbirds, ducks). It is recorded in Zakher lakes and Ain Al Fayda in Al Ain during the migration season. It is sometimes seen near rubbish tips outside towns.

Population Trend

Population trend data from Al Wathba indicates stability in the number of mature individuals.

Distribution Map



Greater Spotted Eagle *(Clanga clanga)*

Threats

The species is vulnerable to shooting to protect other captive species, particularly birds. Also based on our tracking results, two of our satellite-tracked birds were shot, one each in Saudi Arabia and one in Kuwait. Habitat degradation is also one of the threats to the raptors species in UAE.

Conservation Actions Underway

The species would benefit from the conservation of natural sites, such as Marawah island which is already a Marine Protected area in Abu Dhabi. Research and monitoring are already being undertaken in the emirate to gather population counts data. In addition, this species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Lappet-faced Vulture
(Torgos tracheliotos)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2016 Endangered (EN)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Torgos tracheliotos has a very small population in Abu Dhabi < 50 mature individuals. Due to the rapid decline in number of individuals, the species is listed as endangered on a global scale. Therefore, population outside of the country may not have a large rescue effect thus the threat category is assessed as Critically Endangered (CR).

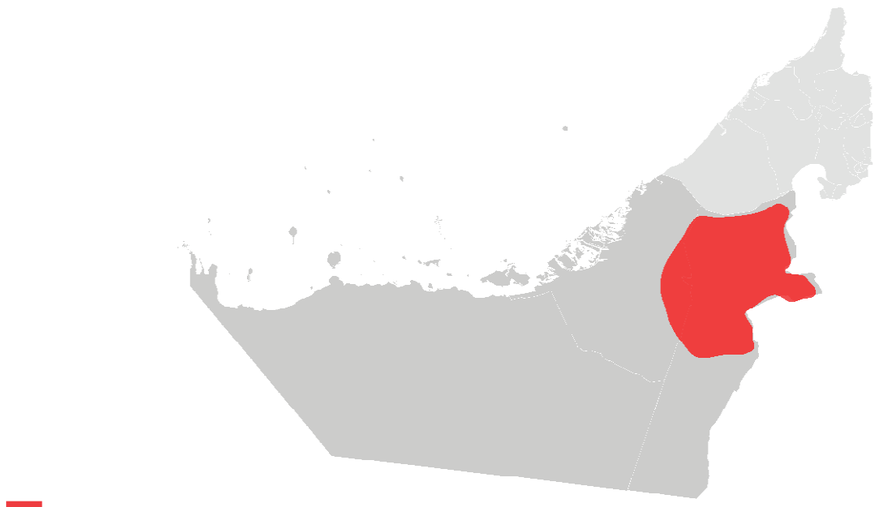
Distribution

The species is recorded from semi-desert with scattered tress, foothills and rocky wadis. It is rarely seen visitor and is recorded from areas in and around Jabal Hafit mountain in Al Ain. Individuals from nesting sites in Oman sometimes range across to the UAE. Individuals may disperse over large areas in search of food.

Population

The species is rare and uncommon in Abu Dhabi Emirate. The species is regularly observed - very few in numbers in a cross border strip to the west of Hajar Mountain between Al Ain and Al Hayer. The individuals from nesting sites in Oman sometimes range across to the UAE. The non-breeding population size is estimated 8-10 mature individuals seen regularly around Jabal Hafit mountain in Al Ain and there is no confirmed breeding recorded from the area.

Distribution Map



Lappet-faced Vulture *(Torgos tracheliotos)*

Population Trend

Population trend is unknown.

Threats

The species is globally threatened and is known to face a very large range of threats that are having a severe impact on the global population. The dead domestic livestock forms their principle food source (Aspinall 1996) in their breeding range in the neighbouring countries and such material is may be less available in Al Ain close to the Jabal Hafit mountain. Food scarcity could be one of the main threat to the species along with suitable undisturbed breeding sites near Jabal Hafit mountain. Use of NSAID (Diclofenac) in livestock in South Asian and African countries has brought several Gyps vultures' species to the brink of an extinction. In the UAE, there is no evidence of any local susceptibility of diclofenac poisoning but this should be closely monitored.

Conservation Actions Underway

Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia Raptor (MoU) has developed a Vulture Multispecies Action Plan to conserve African-Eurasian Vulture (Vulture MsAP). The species is protected under the Federal Law 24 of 1999, which prohibits hunting of the species. In addition, this species is in CMS Appendix I as well as CITES Appendix II. The species is currently held in Al Ain Zoo and should be available for a breeding and release programme in future. Establishment of terrestrial protected area such as Jabal Hafit and habitat conservation programmes is in place.

Western Osprey
(Pandion haliaetus)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Pandion haliaetus has a very small breeding population in Abu Dhabi <250 mature individuals that qualifies it as Endangered. The species may experience rescue effect from the regional population but the EAD's satellite telemetry studies have shown the Abu Dhabi population as a source population in the UAE, as young birds have dispersed from the emirate to other neighbouring countries in the Arabian Gulf and Oman. Thus, the threat category is retained as Endangered (EN).

Distribution

Osprey is widely distributed on most of the islands in Abu Dhabi Emirate, always seen near waters, inland or coastal. Inland wetlands in Al Ain also have occasional records. Species is resident and breeds on near shore and offshore islands of Abu Dhabi in Al Dhafra region.

Population

The species is widely distributed on most of the islands in Abu Dhabi Emirate. Abu Dhabi holds the bulk, if not the entire, UAE breeding population.

Emirate wide breeding population surveys undertaken by EAD have shown that the current breeding population is estimated to be 100 breeding pairs or 200 mature individuals.

Population Trend

Population trend is stable.

Threats

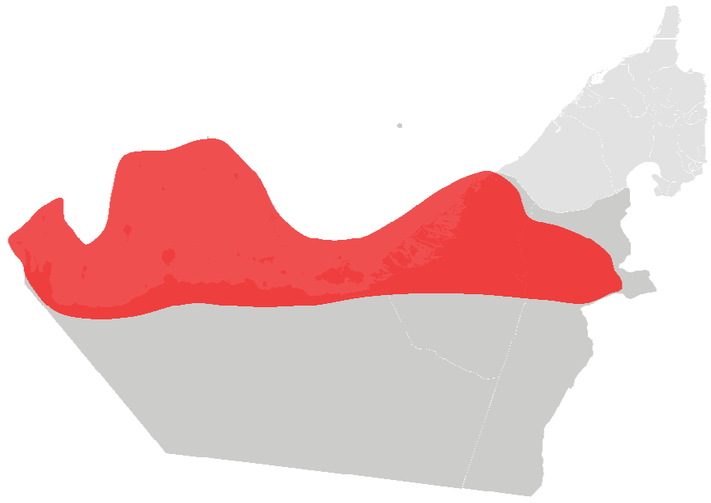
The species is relatively well protected and to some extent have benefited from provision of nesting islands. However, introduction of invasive species such as feral cats/ground predators on breeding sites are considered having an adverse effect on breeding population of the species. Furthermore, oil, residential or industrial development, degradation and disturbance at the breeding sites are major threats to the species. In addition, connection of islands to the mainland may results in desertion by nesting pairs.

Conservation Actions Underway

The species is well protected under the Federal Law 24 of 1999. The species is also listed in the CITES Appendix II and CMS Appendix II of the Raptors MOU.

Some of the sites are already well protected under the marine protected areas network. Additionally the species has potentially benefited from the provision of the artificial nesting platforms, thus offsetting any loss of nesting site from development on few islands.

Distribution Map



Western Osprey *(Pandion haliaetus)*

Pallid Harrier
(Circus macrourus)

VU

Local Red List Assessment Category:
Vulnerable°D

Global Red List Assessment:
2018 Near Threatened (NT)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Circus macrourus has a very small migratory population in Abu Dhabi Emirate <250 mature individuals and therefore it has been categorised as Endangered. The species is migrant and the breeding populations from outside of the country can have rescue effect; therefore, the species is down-listed to Vulnerable (VU).

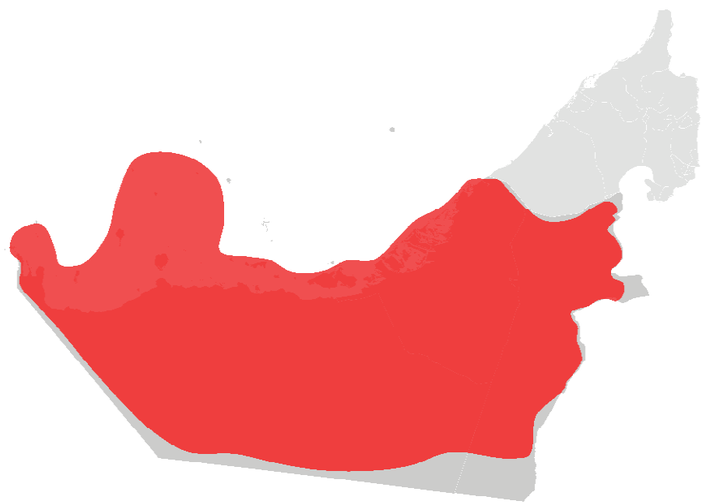
Distribution

The species is a reasonably common at key inland sites and forestry areas in Abu Dhabi, Al Ain and Al Dhafra regions, even in remote Liwa desert due to plantations.

Population

The individuals have been recorded from different habitats in the terrestrial protected areas. The number of mature individuals are estimated to be in the range of 100-125 within Abu Dhabi with the bulk of the birds in the Sila area in Al Dhafra region.

Distribution Map



Pallid Harrier *(Circus macrourus)*

Population Trend

Population trend is unknown.

Threats

Habitat degradation is one of the threats to all the raptors species in UAE. Outside of its breeding grounds (and so potentially of relevance to the population within UAE), the species is thought to be negatively affected by the loss of grassland due to overgrazing. Although this requires further research; and the overall scope and severity of these threats for the population that visits UAE is essentially unknown.

Conservation Actions Underway

The species is listed in Appendix II of CITES, Annex II of the Bonn and Bern Conventions and in Annex I of the EU Birds Directive. Raptors MOU, CMS Appendix II. In the UAE, this species is protected under Federal Law 24 of 1999, which prohibits hunting of this species. In addition, the species would benefit from the conservation of natural habitats in Abu Dhabi Emirate.

Red-billed Tropicbird
(Phaethon aethereus)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Phaethon aethereus has a very small breeding population in Abu Dhabi Emirate. Although significant reduction has been recorded from an offshore island in Abu Dhabi called 'Jarnein Island' where currently no birds have been recorded to breed since last three years, however we suspect that these breeding individuals have shifted to the neighbouring islands, where they have been recorded to breed in the past. Based on the numbers of mature individuals <250 the species qualified to be listed as Endangered (EN).

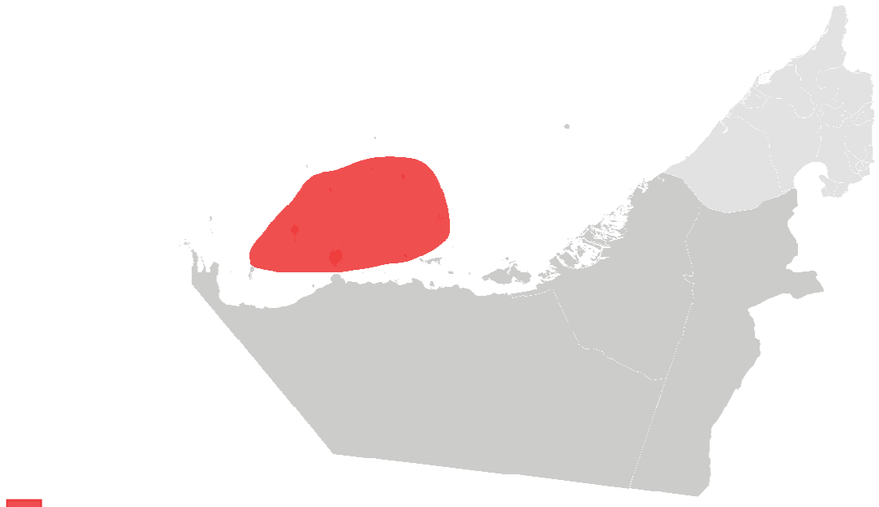
Distribution

The species breeds on three off-shore islands of Jarnein, Zirku and Arzanah in the winter months. Post-breeding, the birds are known to disperse widely and one of the tagged Red-billed Tropic bird was found near the coast in South India.

Population

The species is only known to breed on a few offshore islands in Abu Dhabi Emirate. Within Abu Dhabi, the species breeds on Jernein, Zirku and Arzana islands in winter season. EAD has conducted annual population counts surveys for the species on Jernain Island since 2005. During 2008, the highest recorded numbers were 220 breeding pairs followed by 150 pairs in 2010. The number of breeding pairs have significantly declined on Jernain Island. Currently there is not a single breeding pairs left on this island; however, it is quite possible that the birds have shifted to neighbouring Arzanah Island. Furthermore, it is suspected that at least 75 breeding pairs are present on the neighbouring islands.

Distribution Map



Red-billed Tropicbird *(Phaethon aethereus)*

Population Trend

Population trend is decreasing on one island but may be stable on other two.

Threats

Introduction of invasive species and ground predators such as feral cats to control rats on the islands had adverse effect on significant reduction of breeding pairs on Zirku and Arzanah. In addition, disturbance to the habitat (people presence) on Jarnein islands may be the reason for the abandonment of nesting habitat.

Conservation Actions Underway

The species would benefit from the conservation of the natural rocky habitats of the islands, regular monitoring of breeding birds have been undertaken over the last 15 years by EAD and some other actions such as rodents and pest control measures have been taken by the island management. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Sand Partridge
(Ammoperdix heyi)

VU

Local Red List Assessment Category:
Vulnerable° D

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Ammoperdix heyi is a species with a very restricted geographical range. It is also a species with very a small population size and categorised as Endangered based on < 250 mature individuals. However as the population from other emirates along its distribution range in the Hajar mountains can have a rescue effect, therefore the species is down-listed to Vulnerable (VU).

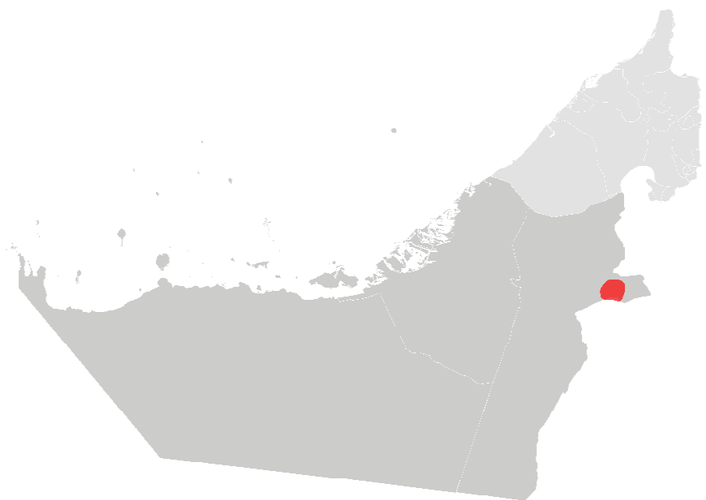
Distribution

The species is found in arid-rocky and stony slopes, wadis and cliffs. It is a resident breeding species, largely localised to Jabal Hafit mountains in Al Ain region.

Population

The species is a resident breeding population, largely localised to Jabal Hafit mountains in Al Ain region. This species is absent from the western region of Abu Dhabi Emirate. Population surveys conducted by EAD have shown that an estimated 200-250 individual may be present on Jabal Hafit mountian from where they have been regularly recorded in a family of 10-20 individuals.

Distribution Map



Sand Partridge *(Ammoperdix heyi)*

Population Trend

Population trend is unknown.

Threats

The major threats to the species are loss of habitats from land use changes, disturbance and more recently from the reintroduced Arabian Partridges may have impact on the resident breeding population of the species. Recreation and hunting within the species's occupied range could have an impact, reducing local numbers and potentially leading to individuals changing their behavioural patterns.

Conservation Actions Underway

The area has already been established as Jabal Hafit Protected area, however despite protected area establishment, the area and the species therein may be vulnerable from development and other activities. In addition, this species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Saunders's Tern
(Sternula saundersi)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Sternula saundersi has a small breeding population in Abu Dhabi <1,000 mature individuals and this number has significantly decreased over the years. In the wider Arabian Peninsula, the number of mature individuals are fluctuating or in decline, local population is unlikely to receive a rescue effect, therefore, the species is listed as Critically Endangered (CR).

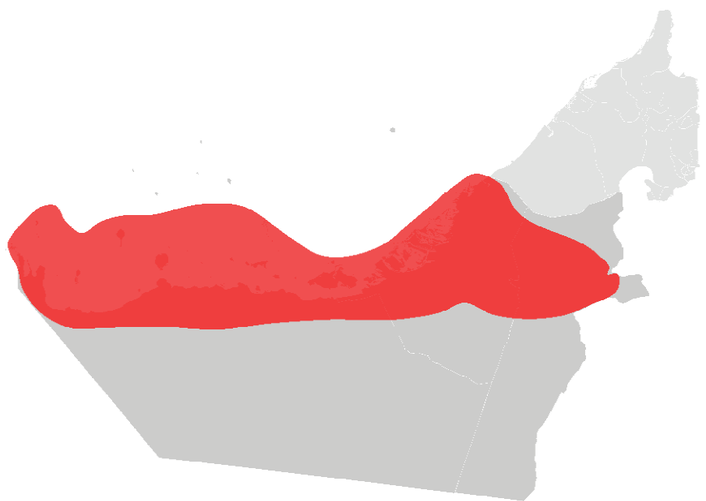
Distribution

Quite widespread on the nearshore and offshore islands as well as coastal areas and occasionally recorded in inland wetlands. Some of the important sites in Abu Dhabi Emirate are Al Yasat, Salaha and Bul Syayeef Marine Protected Area (MPA).

Population

The species is quite widespread on the nearshore and offshore islands as well as coastal areas and occasionally recorded in inland wetlands. Important site in Abu Dhabi are Al Yasat, Salaha and Bul Syayeef. Current breeding population in the emirate based on recent breeding surveys is less than 100 pairs and as per 2016 surveys and over 59 breeding pairs were recorded from 8 sites across the emirates. However, historic data (1996) indicates the presence of 500-1,000 breeding pairs in the UAE, with the bulk in Abu Dhabi; this represents a marked more than 75% reduction over last 25 years.

Distribution Map



Saunders's Tern *(Sternula saundersi)*

Population Trend

Population trend is decreasing.

Threats

The major threats to this species come from the loss of breeding sites due to coastal developments, predation by cats, rats and foxes. Oil pollution and destruction and disturbance to the habitat (people presence) on nearshore and offshore can lead to the abandonment of nesting habitat.

Conservation Actions Underway

The species is listed in CMS Appendix II, and would benefit from the conservation of the natural sandy habitats of the near shore and offshore islands. Regular monitoring of breeding birds have been undertaken over the last 15 years by EAD to understand population trends. This species is also protected under Federal Law 24 of 1999 and Local Law 22of 2005, which prohibits hunting of this species.

Sociable Lapwing
(Vanellus gregarius)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2018 Critically Endangered (CR)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Vanellus gregarius has a very small population not only in Abu Dhabi but also in UAE. The species is in rapid decline on a global scale. Consequently, breeding populations outside of the country may not have a large rescue effect. Therefore, the species is categorised as Critically Endangered (CR).

Distribution

The species is an uncommon winter visitor in the fodder fields and cultivated areas in the UAE and in Abu Dhabi Emirate. The species has been reported from only few sites, occasionally.

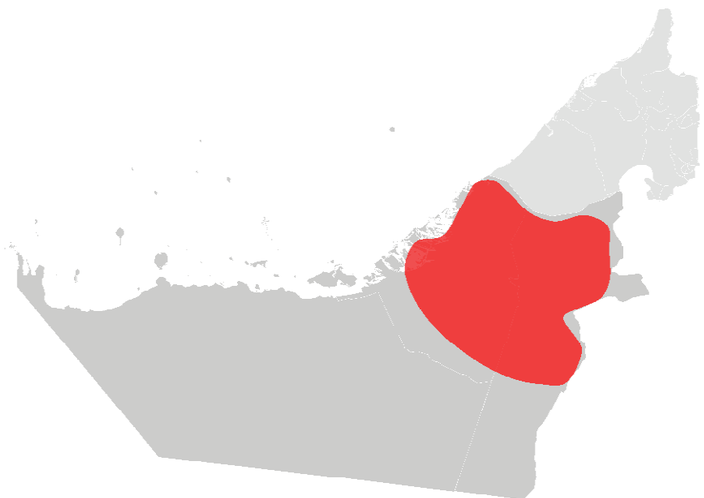
Population

The species is an uncommon winter visitor in Abu Dhabi and UAE and reported from only few sites occasionally. The maximum number of eight individuals having been seen in Al Saad farms in Al Ain, other than that one or two individuals have been reported from seven other localities in Abu Dhabi Emirate.

Population Trend

Population trend is unknown in Abu Dhabi.

Distribution Map



Sociable Lapwing *(Vanellus gregarius)*

Threats

This species is of global significance given its global listing as Critically Endangered. It is likely that the main causes of the global decline come from outside of UAE, and so these external threats are likely the main threats to the population that visits the country. The specific threats to the species in Abu Dhabi is not known. The species may be affected by the increasingly dry climate in its breeding and wintering ranges, but it is not clear if this benefits or threatens this semi-desert species.

Conservation Actions Underway

The species is listed in CMS Appendix I. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species. Population monitoring is continued within the Abu Dhabi at different monitoring sites by EAD to record distribution of the species and to identify the possible threats at local level.

Sooty Falcon
(Falco concolor)

CR

Local Red List Assessment Category:
Critically Endangered A2cde; C2a(i); D

Global Red List Assessment:
2017 Vulnerable (VU)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Falco concolor has a very small breeding population in Abu Dhabi <50 mature individuals. The population is declining rapidly within the country (>80%), and throughout its global range principally for loss of habitat quality, invasive predators and illegal captures. The potential for immigration from outside the UAE is low and decreasing further. Therefore, the species is categorised as Critically Endangered (CR).

Distribution

The species is localised on islands and inland desert cliffs of the western region in the pre-breeding season. Pairs concentrate on a few islands during in the breeding season.

Pre and post-breeding migration movements are widely dispersed and the species is reported from all of Al Dhafra region.

Population

The species is only known to breed on the western islands of Abu Dhabi Emirate in the UAE. The population is migratory and arrives in the UAE from its austral wintering grounds in Madagascar by end of May and return back to Madagascar after completing breeding by end of October, based on the tracking work undertaken by EAD. The number of breeding pairs have apparently declined in the UAE from more than 14-25 breeding pairs nearly three decades ago to the current population of (2-3) breeding pairs.

Population Trend

Population trend is decreasing in Abu Dhabi.

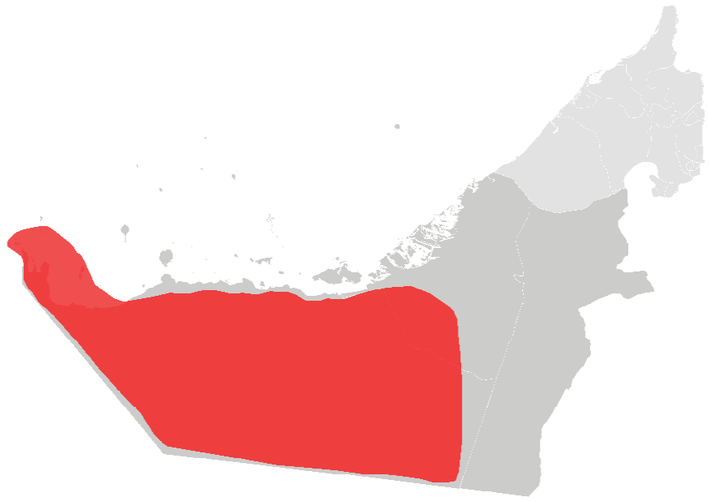
Threats

Development on some of the breeding islands have been responsible for loss of breeding sooty falcons from islands such as Delma and Sir Bani Yas. Development of the islands in western Abu Dhabi has further affected the small breeding population of the UAE. Additional invasive predators at breeding sites and disturbance from people's presence and occasional trapping and capture as non-target species are also some of the threats.

Conservation Actions Underway

The species is under the Raptors MOU, CMS Appendix II. Draft Sooty falcon action plan has been prepared under the aegis of CMS. Main nesting Island has been included in the Yasat Marine Protected Area. Additionally provision of nest boxes have been attempted and regular awareness is raised. This species is also protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Distribution Map



Sooty Falcon *(Falco concolor)*

Green-backed Heron
(Butorides striata)

VU

Local Red List Assessment Category:
Vulnerable D1

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Butorides striata has a small (< 1,000 mature individuals) and restricted population. The population trend is unknown and no specific threats have been recorded. Therefore, it is considered as VU. The species is a resident breeding in Abu Dhabi. However as it is unlikely that the population experiences immigration, the assessed category would remain as Vulnerable (VU).

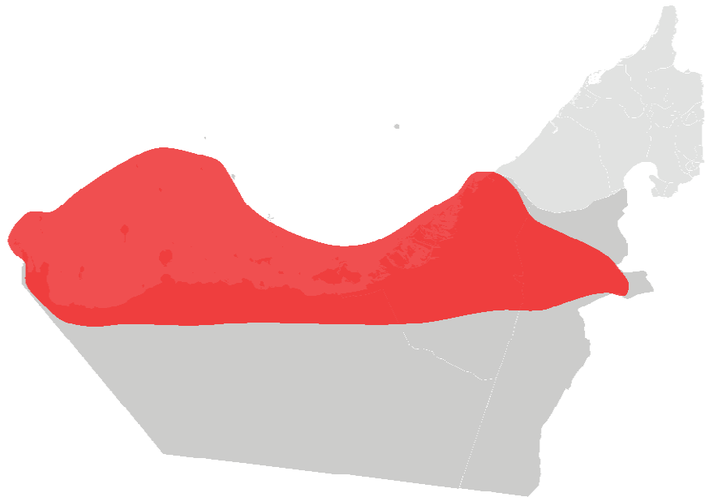
Distribution

The species is a resident breeding bird, largely restricted to mangroves and also occurs in suitable mainland and island sites. It occurs across the Abu Dhabi Emirate from areas in the Al Ain and Al Dhafra regions.

Population

This species is a common resident along coastal areas of Abu Dhabi; but uncommon to rare, further inland. The species is largely restricted to mangroves and occurs in suitable mainland and island sites. It has been reported to occur from over 75 sites across Abu Dhabi, Al Ain and Al Dhafra regions.

Distribution Map



Green-backed Heron *(Butorides striata)*

The population estimates is the number of 400 - 500 mature individuals recorded from across the Abu Dhabi Emirate.

Population Trend

Population trend is unknown.

Threats

The most relevant threats to this species are from habitat destruction (*e.g.*, the loss of mangroves).

Conservation Actions Underway

This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species. General conservation measures such as the sustainable use and re-planting of mangroves would probably benefit this species.

Tufted Duck
(Aythya fuligula)

EN

Local Red List Assessment Category:
Endangered° D

Global Red List Assessment:
2018 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Aythya fuligula has a very low (<50)number of mature individuals in Abu Dhabi. For that reason is categorised as CR. It also has restricted distribution in Abu Dhabi. However, as the probability of individuals exchange with populations outside of Abu Dhabi is high, the species was down-listed to Endangered (EN).

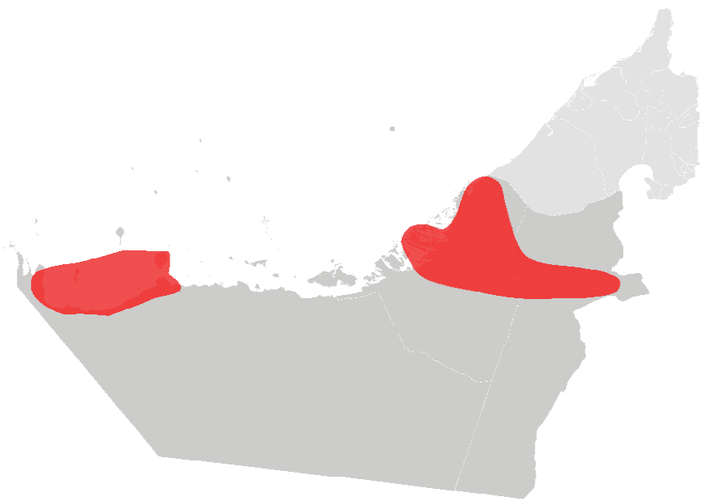
Distribution

The species is recorded during winter months from coastal sites, inland freshwater lakes and pools across Abu Dhabi, Al Ain and Al Dhafra regions. The species however is more abundant in Zakher lake and Al Wathba Wetland Reserve.

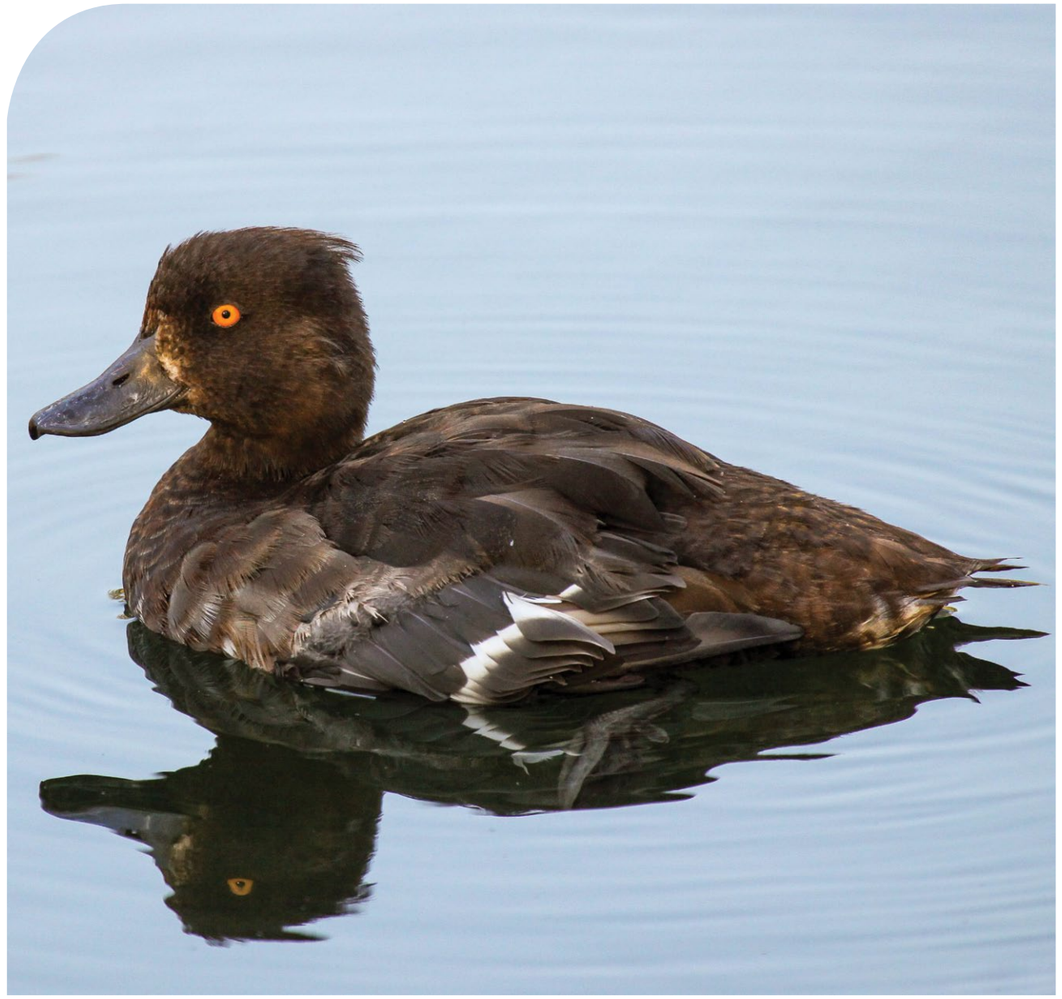
Population

The species is recorded during winter months as an overwintering bird from 15-20 sites across Abu Dhabi, Al Ain and Al Dhafra regions. The species however is more abundant in Zakher Lake and Al Wathba Wetland Reserve from where 25-30 individuals have been regularly reported during the winter season. Furthermore, 10-30 mature individuals may be present at any given time across 10 sites in Abu Dhabi Emirate from where they have been reported.

Distribution Map



Tufted Duck *(Aythya fuligula)*



Population Trend

Population trend unknown.

Threats

The most relevant threats within Abu Dhabi Emirate are changes in land-use and the possibility of oil pollution. The species may be also threatened by disturbance from water-based recreation and from urban development as well as by habitat destruction, but the severity of these threats towards this species is unknown.

Conservation Actions Underway

The species would benefit from the conservation of the natural habitats and protected area, regular monitoring of the species to count number of individuals in some inland wetlands of Abu Dhabi have been undertaken over the last 15 years by EAD and is continued. It is Annex 1 and in addition this species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Water Rail
(Rallus aquaticus)

EN

Local Red List Assessment Category:
Endangered° D

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Rallus aquaticus has a relatively restricted distribution. However, the number of mature individuals is very low <50. For that reason is categorised as Critically Endangered (CR). However, as the species has a visiting population in Abu Dhabi and for the probability of rescue by breeding populations outside of Abu Dhabi, the category is down-listed to Endangered (EN).

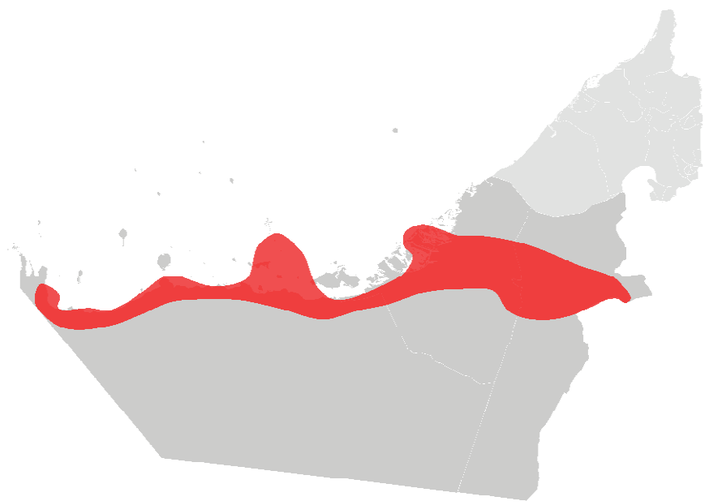
Distribution

An uncommon winter visitor to the UAE, the species has been reported from seven sites across Abu Dhabi, from Al Wathba to Al Ain and in Sila and Ruwais.

Population

The species in the UAE is possibly a casual breeder and uncommon winter visitor in wetlands habitats. The species has been recorded from seven localities of different habitats from Al Wathba Wetland in Abu Dhabi to Al Ain region and in Al Dhafrah region. The visiting population may be in the range of only 10-15 individuals across all the sites.

Distribution Map



Water Rail *(Rallus aquaticus)*

Population Trend

Population trend is unknown.

Threats

The most relevant threats within Abu Dhabi Emirate are changes in land-use and the possibility of oil pollution. The species may be also threatened by disturbance from water-based recreation and from urban development as well as by habitat destruction, but the severity of these threats towards this species is unknown.

Conservation Actions Underway

The species would benefit from the conservation of natural habitats in Abu Dhabi Emirate. In addition, the species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 that prohibits hunting of this species.

Western Marsh-harrier *(Circus aeruginosus)*

VU

Local Red List Assessment Category:
Vulnerable° D

Global Red List Assessment:
2016 Least Concern (LC)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Circus aeruginosus has a very small visiting population in Abu Dhabi Emirate, which qualifies it for listing it as Endangered (EN). In the wider Arabian Peninsula, the population is considered to be stable. Therefore, breeding populations outside of the country may immigrate into the UAE and thus have a large rescue effect. Therefore, the species has been down-listed as Vulnerable (VU).

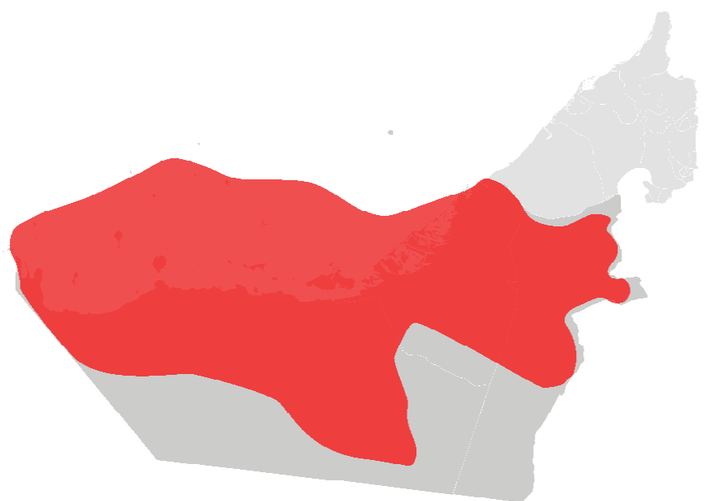
Distribution

The species is a very common winter migrant to the emirate and is regularly seen at key inland wetlands, coastal wetlands, forestry areas and occasionally on some islands.

Population

The species is a very common winter migrant to the emirate and is regularly seen at key inland wetlands, coastal wetlands, forestry areas and occasionally on some islands. The population is estimated to number 150-200 mature individuals recorded from all the different sites in the emirate with bulk of the birds from Al Wathba Wetlands Reserve.

Distribution Map



Western Marsh-harrier *(Circus aeruginosus)*

Population Trend

Population trend stable.

Threats

Habitat degradation is one of the main threats to all the raptors species in the UAE. Outside of its breeding grounds (and so potentially of relevance to the population within UAE), the species is thought to be negatively affected by the loss of grassland due to overgrazing. Although this requires further research; and the overall scope and severity of these threats for the population that visits UAE is essentially unknown. However, hunting is one of the major threats identified to the species in Abu Dhabi as one of the tagged bird - fitted with satellite transmitter by EAD was shot-down in Al Houbara Protected area in Abu Dhabi.

Conservation Actions Underway

The species is listed in CMS Appendix II and CITES Appendix II. The species would benefit from the conservation of the natural habitats such as in the inland wetland and forestry plantations. EAD is monitoring its population in the inland wetlands and other sites for last 15 years and has undertaken satellite tracking of the species to understand its migratory route and potential breeding areas. This species is also protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.

Cinereous Bunting
(Emberiza cineracea)

EN

Local Red List Assessment Category:
Endangered° D

Global Red List Assessment:
2016 Near Threatened (NT)

Assessors:
Khan, S.B., Ahmed, S., Javed, S.

Rationale

Emberiza cineracea has a relatively restricted distribution, but threats and number of locations are unknown. However, the number of mature individuals is very low (<50), for that reason it is categorised as Critically Endangered (CR). Because of the high probability of rescue by birds outside Abu Dhabi, the species is down-listed to Endangered (EN).

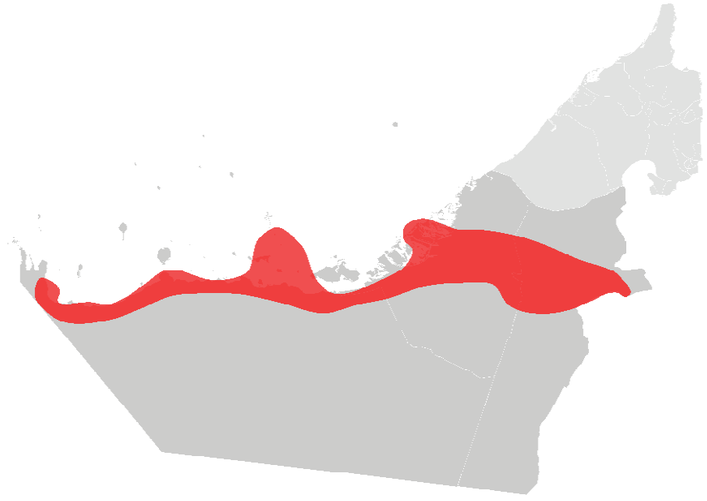
Distribution

Species is a rare to uncommon winter migrant and is seen in small numbers during spring on dry rocky slopes with sparse vegetation, also semi-desert or busy wadis. An estimated 10-15 individuals could be present from approximately 15-20 sites distributed widely across Abu Dhabi Emirate, including Abu Dhabi island, Jebel Dhanna and coastal areas upto Sila.

Population

The species is rare to uncommon winter migrant from late March to mid-May and seen in small numbers during spring season in the emirate. The estimated population of 10-15 mature individuals recorded from 15-20 sites across the emirate including Abu Dhabi Island.

Distribution Map



Cinereous Bunting *(Emberiza cineracea)*

Population Trend

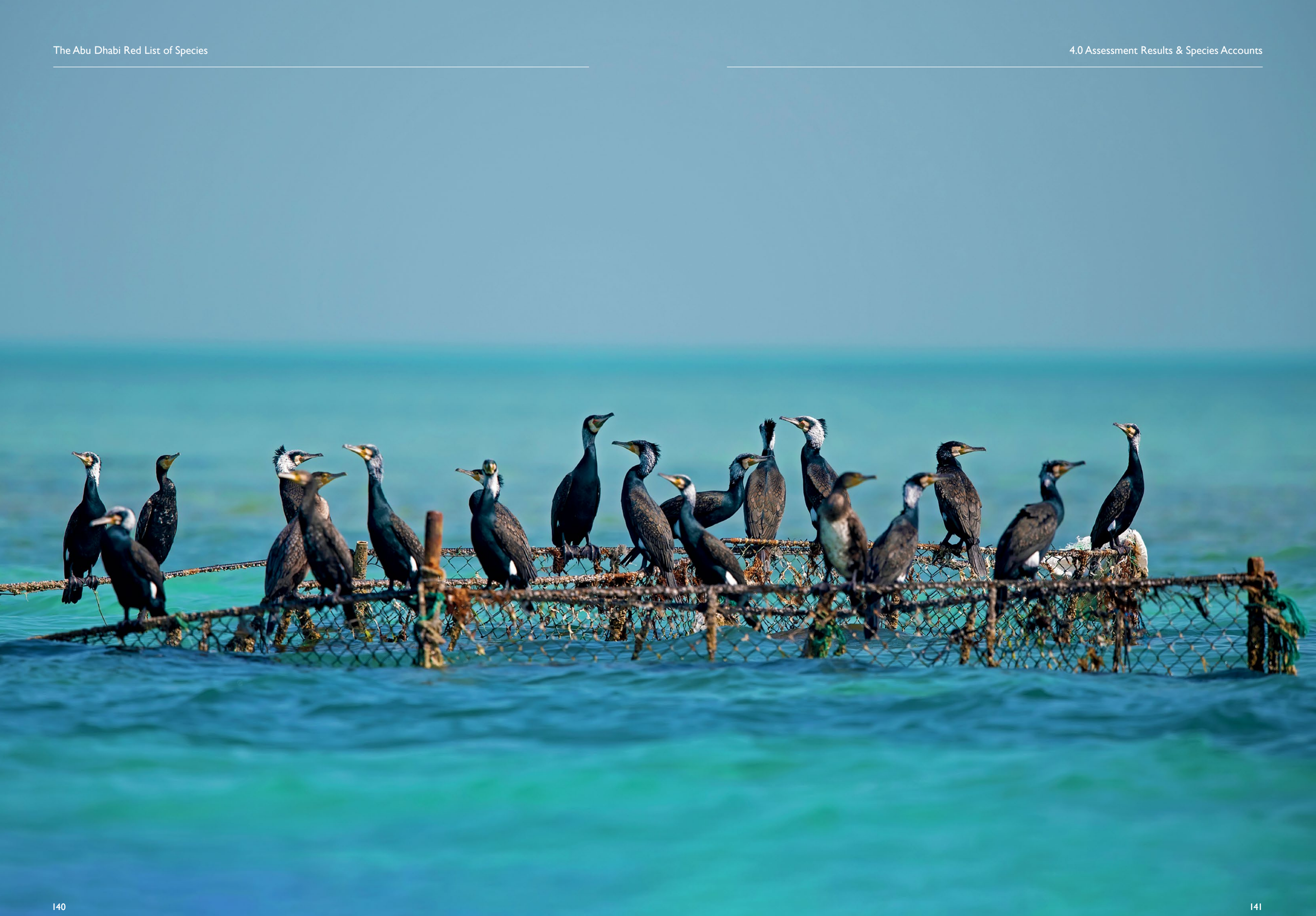
Population trend is unknown.

Threats

Natural system modifications, residential and commercial development for tourism and recreation areas within the emirate can be a threat to the species. However, the main threats to the species are not known.

Conservation Actions Underway

The species would benefit from the conservation of the natural habitats in the emirate. Regular monitoring for the species occurrence along with other avian species is continued by EAD at different localities. This species is also protected under Federal Law 24 of 1999 and Local Law 22 of 2005, which prohibits hunting of this species.



4.5 Conservation Status of Terrestrial Reptiles and Amphibians in Abu Dhabi Emirate

Pritpal Soorae & Ahmed Ali Mohamed

Introduction

In Abu Dhabi Emirate there are about 46 species of terrestrial reptiles and 2 amphibian species. Lizards are represented by 35 species, there is one amphisbaenidae and 11 snake species from four main families. Terrestrial reptiles within Abu Dhabi Emirate can be found from offshore islands, coastal dunes to the inland mega-dunes, gravel plains and on Jabal Hafit the only mountainous range in the emirate. Reptiles have also been recorded from some extreme and harsh habitats such as sabkhas which harbours the specialised Gulf sand gecko (*Pseudoceramodactylus khobarensis*) that is adapted to live in this harsh ecosystem. The Persian Horned Viper (*Pseudocerates persicus*) and Sinai Agama (*Pseudotrapelus sinaitus*) are only found on Jabal Hafit as they are specialised mountain species.

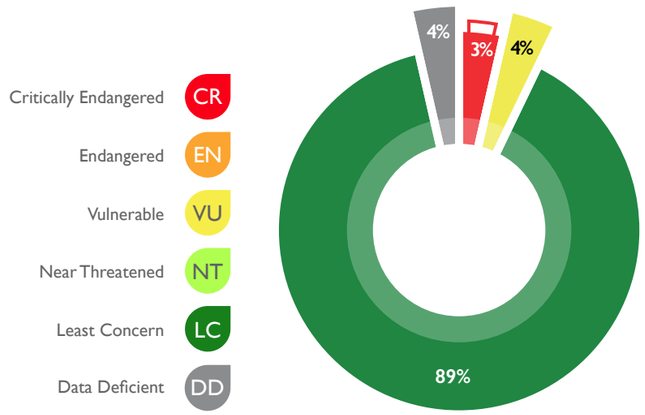


Figure 4.5.1: Status of reptile species assessed.

Out of a total of 26 reptiles and 2 amphibians assessed; one species is Critically Endangered (CR), one species is Vulnerable (VU), one species is Data Deficient (DD), and 25 are Least Concern(which include 23 reptiles and 2 amphibians).

The Wonder Gecko (*Teratoscincus keyserlingii*) is listed as Critically Endangered (CR) as its key habitat along the coastal dunes stretching from Abu Dhabi to the Northern Emirates are under high development pressure. A recent genetic survey found all UAE populations to be the same as those found in Central Asia with little genetic variation this has enabled better conservation actions when any mitigation plans are put into place. A similar genetic study is also being done for the Spiny-tailed lizard (*Uromastyx aegyptia*), which is listed as Vulnerable (VU) to enable better decision making when any mitigation actions have to be undertaken.

Egyptian Spiny-tailed Lizard *(Uromastyx aegyptia)*

VU

Local Red List Assessment Category:
Vulnerable A2cd

Global Red List Assessment:
2018 Vulnerable (VU)

Assessors:
Mohamed, A., Soorae, P.

Rationale

For the purpose of this assessment we are considering *Uromastyx aegyptia* at a species level as we are in the process of undertaking a UAE wide genetic study on this species. *Uromastyx aegyptia* exhibit a patchy distribution range within Abu Dhabi Emirate. There has been a decline of 30% over the last 45 years. The causes of this decline can be attributed to habitat loss due to development activities, and some level of exploitation of the species. Hence, this species is categorised as Vulnerable (VU).

Distribution

This species range extends from the west starting in Egypt across the Arabian Peninsula into Oman in the East. In the north it extends up to Syria and Iraq. Within the UAE this species is mainly found on gravel plain areas and in lithified sand dunes. In these types of habitats they can easily dig burrows.

Population

This species is found across Abu Dhabi Emirate but in localised areas where they can dig burrows as they are a colonial species. Many populations have recently been impacted by development projects and a population decline of 30%. They are recorded in Abu Dhabi's protected areas and there are healthy populations in the Al Houbara Protected area and Barqa Al Soqour Protected areas of Abu Dhabi's western region.

Distribution Map

Egyptian Spiny-tailed Lizard *(Uromastyx aegyptia)*

Population Trend

The populations are decreasing.

Threats

The Spiny-tailed lizard habitat is being lost due to overgrazing, human settlement, large-scale agricultural expansion and land reclamation. In the region this species is harvested for the international pet trade, medicinal use and is reputed to have aphrodisiac properties.

Conservation Actions Underway

There is a UAE wide genetic project underway which is trying to determine the genetic status of populations within the UAE. This will hopefully enable us to make decisions on any mitigation actions involving the relocation of species. This species is protected under Federal Law 24 of 1999 and Local Law 22 of 2005 which prohibits hunting of this species. This species is listed on Appendix II of CITES.

Wonder Gecko
(Teratoscincus keyserlingii)

CR

Local Red List Assessment Category:
Critically Endangered A3cd

Global Red List Assessment:
2018 Critically Endangered (CR)

Assessors:
Mohamed, A., Soorae, P.

Rationale

Teratoscincus keyserlingii has a very localised and patchy distribution in an area stretching from Abu Dhabi city to Dubai and occurs in very scattered populations in Sharjah and Ras Al Khaimah. Its extent of occurrence is less than 100 km^2 and the population is suffering from habitat fragmentation. The predicted population decline is more than 80% over the next 25 years. Then this species is categorised as Critically Endangered (CR).

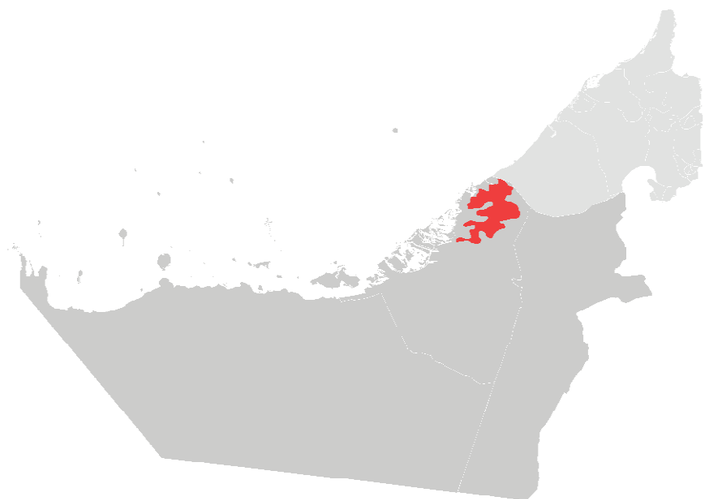
Distribution

The species is distributed in Pakistan, Iran, and Afghanistan but in the UAE it has a very limited distribution along the eastern coastal belt.

Population

In Abu Dhabi Emirate Wonder Gecko populations are usually found along the coastal belt stretching from Abu Dhabi airport to Ghantoot on the Dubai Emirate border. EAD has recorded populations in <10 localised sites. Nocturnal surveys have shown that in these localised sites we have in some cases recorded over 15 individuals. Another unique finding is that in adjoining areas with similar habitat characteristics no individuals will be observed. In some cases small population pockets have been found within industrial areas with lights and heavy machinery disturbance.

Distribution Map



Wonder Gecko *(Teratoscincus keyserlingii)*

Threats

Development, habitat fragmentation and predation from introduced species such as Feral Cats.

Population Trend

The trend for this species is declining and the population is predicted to decline by more than 80% over the next 25 years (3 generations) due to extensive and intensive urban construction currently ongoing and development planned in the future across its range.

Conservation Actions Underway

A UAE wide Wonder Gecko Conservation Action Plan was prepared after a UAE wide workshop which identified conservation actions for this species.

4.6 Conservation Status of Invertebrates in Abu Dhabi Emirate

Anitha Saji & Zamzam Alrashdi

Introduction

The United Arab Emirates have recorded more than 4,000 invertebrate species, out of which almost 2,312 have been recorded in the Emirate of Abu Dhabi. For the regional red listing project, we assessed a total number of 25 species after decisions based on different quantitative criteria to assess the extinction risk of the given species. Of the assessed species one is Critically Endangered (CR), two as Vulnerable (VU) and one as Endangered (EN). The remaining species were assessed as either Near Threatened (NT), Least Concern (LC) or Data Deficient (DD).

Systematic monitoring programmes being carried out for scorpion species in protected areas help understand the current populations are stable or declining, and the status and needs of their habitats.

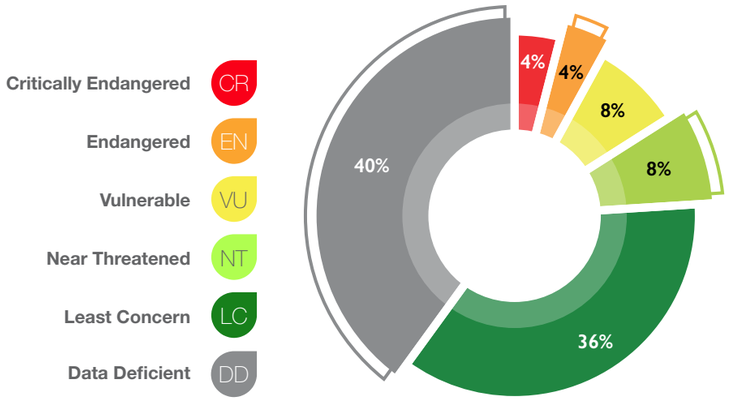


Figure 4.6.1: Status of invertebrate species assessed.

Establishment of various protected areas would ensure conservation of suitable habitats and to prevent disturbance. As far as insect species are concerned, the biotope and host-plant protection are the priority for conservation. Systematic monitoring of the species, within and outside protected areas is being undertaken by EAD and achieved in finding 'new species' and naming them. Giving a species a name is the first step towards protecting it from extinction. Once it is identified, efforts to monitor and conserve the species can be put in place.

Ultimately, the key to protection of any species is protecting its habitat. Successful conservation of invertebrates requires a greater understanding by the general public, scientists and conservationists of the extraordinary value that these organisms provide. In order to accomplish this goal, public education programmes are being carried out to enhance the recognition of invertebrates' positive values, and indeed, of all biological diversity.

Yellow Desert Scorpion
(Vachoniolus globimanus)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Saji, A., Alrashdi, Z.

Rationale

Vachoniolus globimanus has an old estimate of less than 50 mature individuals in the population. But in general there is little knowledge about this species and is categorised as Critically Endangered (CR).

Distribution

This species has been recorded from western and eastern region of Abu Dhabi Emirate, from Bida' Hazza', Madinat Zayed, Al Aslab, Sweihan, Arabian Oryx Protected area and Al Khatam.

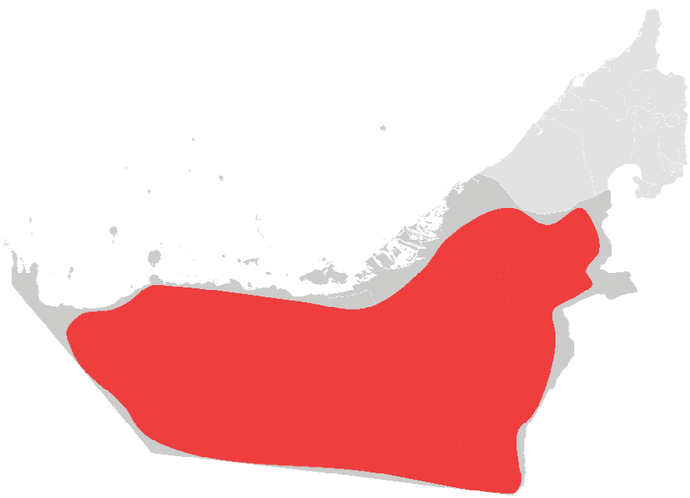
Population

Very few (<50) individuals were recorded from different sites in Abu Dhabi during 2008. There are no recent observation records of this species in the emirate. The information on population increasing or decreasing in Abu Dhabi is currently unknown.

Population Trend

Population trend is unknown.

Distribution Map



Yellow Desert Scorpion *(Vachoniolus globimanusi)*

Threats

These are the prey species for snakes and birds. The climatic conditions may affect their breeding season as their breeding depends on the moisture conditions in deserts. Habitat modification and desert driving can destroy their micro-habitat.

Conservation Actions Underway

EAD continues to ensure the effective management and monitoring of the invertebrate species Establishment of various protected areas would ensure conservation of suitable habitat and to prevent disturbance. Systematic monitoring of the species, within and outside protected areas is being undertaken by EAD.

Camel Spider
(Galeodes arabs)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Saji, A., Alrashdi, Z.

Rationale

Galeodes arabs has a small population in Abu Dhabi with less than 250 individuals and has an AOO of approximately 40 km² The species is a breeding species in the emirate and does not experience any immigration as there is no extreme changes to the vegetation structure in the areas of its occurrence. Hence the species is categorised as Endangered (EN).

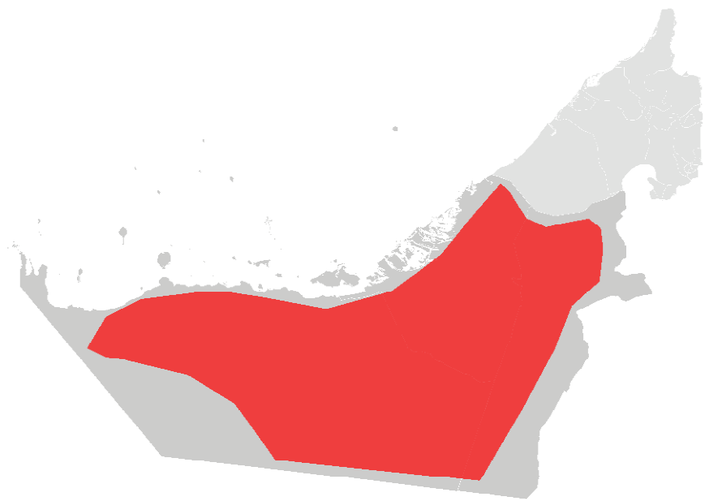
Distribution

Rare species known to occur less frequently and restricted to desert and semi-desert habitats. In Abu Dhabi Emirate, this species found in Al Ain, Sweihan, Ruwais, Ghayathi, Madinat Zayed, Barqa Al Soqour and Bida' Hazza' and Al Houbara Protected areas.

Population

The population is <250 individuals based on the records of EAD's research and surveys in the past 10 years.

Distribution Map



Camel Spider *(Galeodes arabs)*

Population Trend

Population trend is unknown.

Threats

They are typically found in deserts and the climatic conditions may affect their breeding season as their breeding process depends on the moisture conditions in deserts. Habitat modification and desert driving can destroy their micro-habitats.

Conservation Actions Underway

EAD continues to ensure the monitoring of the invertebrate species in the protected areas. Establishment of various protected area would ensure conservation of its suitable micro-habitat and to prevent disturbance. Systematic monitoring of the species, within and outside protected areas is being undertaken by EAD.

Arabian Black Fat-tailed Scorpion *(Androctonus crassicauda)*

VU

Local Red List Assessment Category:
Vulnerable D1

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Saji, A., Alrashdi, Z.

Rationale

Androctonus crassicauda has a population in Abu Dhabi with less than 1,000 mature individuals. This is a widespread species in the UAE and has been recorded in 13 protected areas of Abu Dhabi Emirate. This species reproduces in the emirate and does not experience any immigration as there is no extreme changes to the vegetation structure in the areas of its occurrence. Climate change and alteration of habitats could be important threats in the near future. For these reasons this species is categorised as Vulnerable (VU).

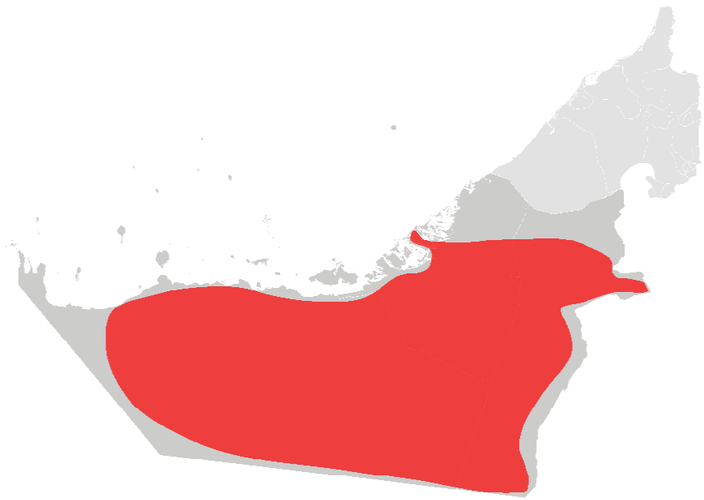
Distribution

This is a widespread species in the UAE and is recorded from different sites in the Abu Dhabi Emirate such as Bida' Hazza', Sweihan (NARC), Al Ain (Jabal Hafit), ADCO- Oil Fields (NEB, Saheil, Asab, Shah, Bu Hasa, Jebel Dhana), Al Wathba, Al Houbara Protected area, Al Houbara Protected area forest and Madinat Zayed.

Population

The population of this species is stable, with an estimate of less than 1,000 individuals..

Distribution Map



Arabian Black Fat-tailed Scorpion *(Androctonus crassicauda)*

Population Trend

Population trend is stable.

Threats

The loss of its specific habitats is a threat that would lead to species extinction.

Conservation Actions Underway

EAD continues to ensure effective management and monitoring of the invertebrate species. Establishment of various protected areas ensures conservation of suitable habitat and to prevent disturbance. According to Federal Law No. 24 1999, it is prohibited to collect them illegally. The species benefits from the conservation of natural sites. Monitoring and assessment surveys to record the presence and absence of this species are being carried out in the emirate by EAD.

Common Swallowtail Butterfly *(Papilio machaon)*

VU

Local Red List Assessment Category:
Vulnerable B1ab(iii,v)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Saji, A., Alrashdi, Z.

Rationale

Papilio machaon has an EOO of about of 6,000 km². The principal threats are habitat loss, unregulated collection and predation by invasive bird species. They occur in less than 10 locations. This species is categorised as Vulnerable (VU).

Distribution

In Abu Dhabi Emirate this species recorded in Jabal Hafit and Al Ain.

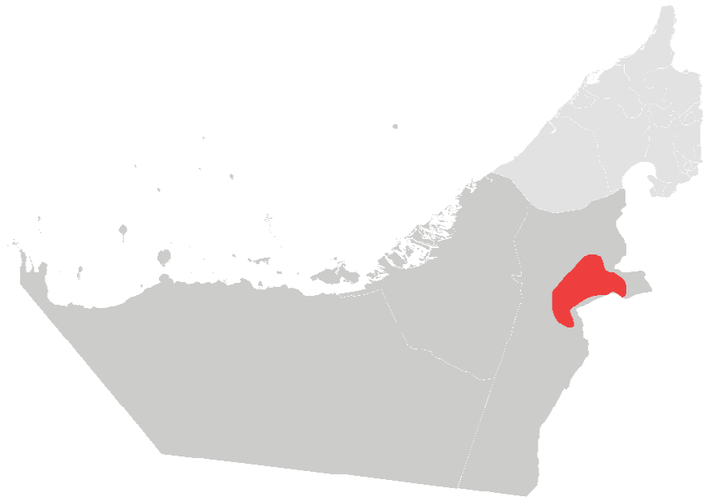
Population

This species is considered to be rare and highly restricted, and lacks population estimates.

Population Trend

Population trend is unkown.

Distribution Map



Common Swallowtail Butterfly *(Papilio machaon)*

Threats

Habitat loss due to fragmentation of mountain habitats in the eastern region of the Abu Dhabi Emirate and high temperatures could threaten butterflies. Lack of rainfall affects the flowering plants that larvae feed on causes threats in the breeding habitats of this species. Climate change has direct and indirect impacts. The invasive species of birds feed on the species (Indian Mynah), unregulated collection and spraying of pesticides could also affect.

Conservation Actions Underway

Protection of habitat has already been implemented in the Jabal Hafit National Park of the Abu Dhabi Emirate. Control of invasive species, protection of breeding habitats and plant species, restrictions on pesticides were ensured where these species occur.

4.7 Conservation Status of Plants in Abu Dhabi Emirate

Sabitha Sakkir & Maher Kabshawi

Introduction

Abu Dhabi is home to around to 436 species of vascular plants. Using IUCN Red list categories and criteria, assessment of plants species have been done in order to prioritise the species for conservation management. Conservation assessment has been done for 101 plant species during the first phase. No species are in regionally extinct category. Eight species are Critically Endangered (CR), 11 species are Endangered (EN), four are Vulnerable (VU), 18 species are Near Threatened (NT), 46 species are of Least Concern (LC) and 13 species are Data Deficient (DD). Many of our native plant species have small population size and restricted distribution. Climate change, deforestation, increasing urban development and over grazing are some of the key threats to the flora in the region.

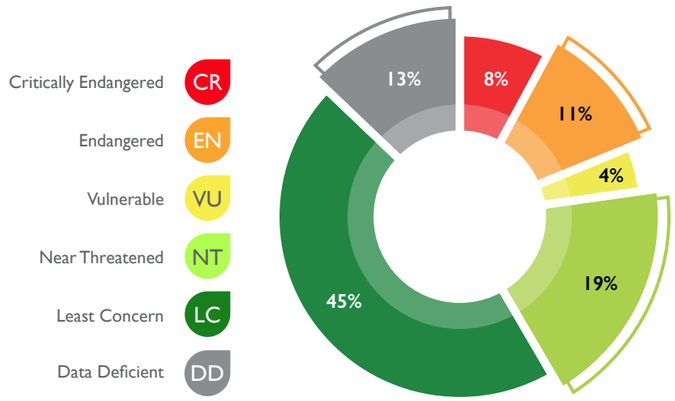


Figure 4.7.1: Status of plant species assessed.

Conservation actions of flora in the region include *in-situ* approaches such as protected areas and natural reserves and *ex-situ* approaches such as seed banks and plant nurseries. Species-specific action plan have been prepared for species such as Dwarf palm (*Nannorrhops ritchieana*), White saxaul (*Haloxylon persicum*), Ghaf (*Prosopis cineraria*) and Samr (*Vachellia tortilis*).

Regular monitoring of many species have also been carried out either as part of the implementations of the action plans or as part of the continuous monitoring for habitats and species associated with it . However, further monitoring and research activities are recommended in order to have a better understanding of the population trends of the species. These diverse conservation approaches can not only help in saving plant species in danger but also helps in widening our knowledge base of these species which can in turn pave way for their sustainable use.

Oriental Cherry
(Acridocarpus orientalis)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(iii,v)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Acridocarpus orientalis is restricted to only one site in Abu Dhabi with an EOO of less than 100 km². The population is severely fragmented and threatened by habitat destruction, overgrazing and release of exotic animals. There is continuous decline observed in the quality of habitat and number of mature individuals. Hence the species is assessed as Critically Endangered (CR).

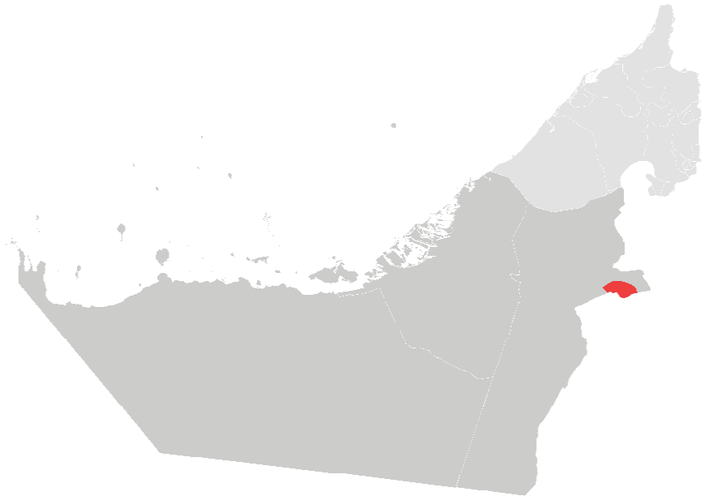
Distribution

In the UAE, the species is known only from Abu Dhabi. Main occurrence in Abu Dhabi is limited and restricted to Jabal Hafit mountains at the end of Wadi Tarabat, at medium elevations.

Population

The populations are small and fragmented.

Distribution Map



Oriental Cherry *(Acridocarpus orientalis)*

Population Trend

Population trend is decreasing.

Threats

This species is under threat due to the loss of habitat caused by habitat destruction, construction of roads, and release of exotic animals. The species is also affected by extreme drought, over-grazing and low natural regeneration.

Conservation Actions Underway

A Conservation Action Plan has been developed for *Acridocarpus orientalis*. The species is also present within Jabal Hafit National Park. *Ex-situ* conservation measures are underway e.g., artificial propagation, re-introduction and seed collections from the natural stands. Protection of the individuals through legislation, which bans the species from being cut off. Systematic monitoring of the existing population and sites is also ongoing. The species is also protected under Federal Law 24 of 1999.

Maidenhair Fern
(Adiantum capillus-veneris)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(i,ii,iii,v)

Global Red List Assessment:
Least Concern (LC)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Adiantum capillus-veneris is known from a single site in Abu Dhabi with an EOO of <100 km^2. A continuous decline has been observed in the extent of occurrence, area of occupancy and in the extent and quality of habitat due to human invasion and habitat destruction. Based on that, this species is categorised as Critically Endangered (CR).

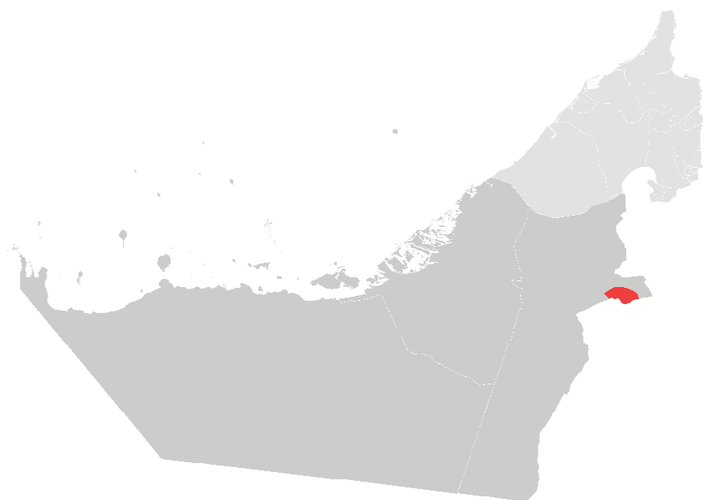
Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit at high elevations in moist wadis and in shaded cliffs with water seepage.

Population

The populations are small and fragmented.

Distribution Map



Maidenhair Fern *(Adiantum capillus-veneris)*

Population Trend

Current population trend is declining.

Threats

The main threats are habitat loss and degradation. Human intrusions, disturbance, and lack of availability of water are other threats to the species.

Conservation Actions Underway

A Conservation Action Plan has been developed for *Adiantum capillus-veneris*. This fern is recorded within Jabal Hafit National Park. Conservation measures include systematic monitoring of the existing population and sites. The species is also protected under Federal Law 24 of 1999.

Caralluma
(Desmidorchis arabica)

CR

Local Red List Assessment Category:
Critically Endangered B2ab(iii);C2a(i)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Desmidorchis arabica is known from a single site in Jabal Hafit with an EOO of less than 100 km². It has a very small and restricted population. The number of mature individuals <50. Hence the species is assessed as Critically Endangered (CR).

Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit mountains at high elevations. The species is seen among rocks.

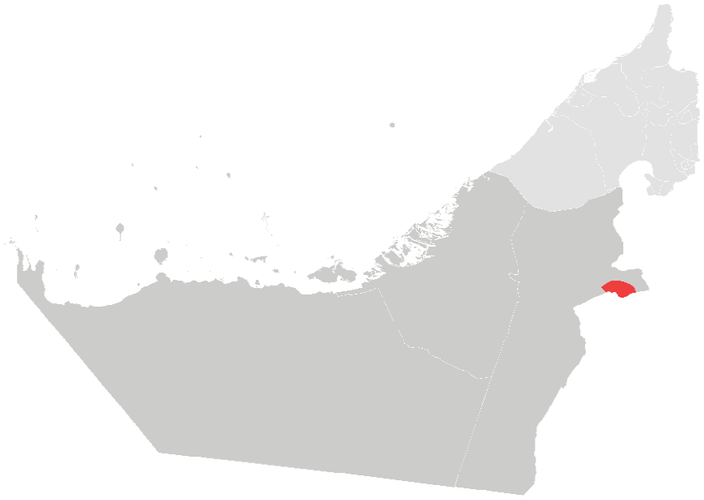
Population

The populations are small and are restricted.

Population Trend

Current population trend is declining.

Distribution Map



Caralluma *(Desmidorchis arabica)*

Threats

This species is under threat due to the loss of habitat caused by habitat development. The species is also impacted by seasonal drought, which prevents the natural regeneration of the species. Collection by people for different uses is also threat to the species.

Conservation Actions Underway

A Conservation Action Plan has been developed for *D.arabica*. This plant is recorded within Jabal Hafit National Park. Conservation actions include the monitoring of the existing population and sites. *Ex-situ* conservation measures are ongoing and more than 600 plants have been successfully propagated in EAD nursery. The species is also protected under Federal Law 24 of 1999.

Dipcadi Lily
(Dipcadi biflorum)

CR

Local Red List Assessment Category:
Critically Endangered C2a(i);D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Dipcadi biflorum has a very small population with a number of mature individuals <50. This species is also very restricted being known from a single site in Jabal Hafit with an AOO of 12 km². There are threats to the populations due to grazing and habitat destruction and hence the species is categorised as Critically Endangered (CR).

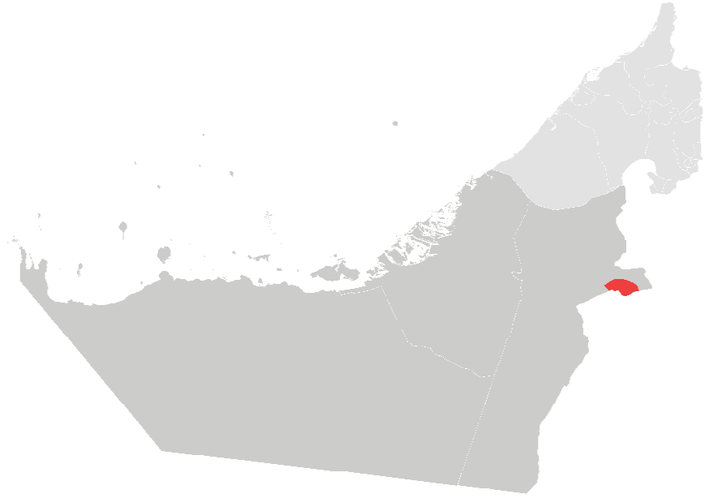
Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit at high elevations. The plant appears soon after the rains in the gravel plains.

Population

The populations are small and are fragmented.

Distribution Map



Dipcadi Lily *(Dipcadi biflorum)*

Population Trend

Current population trend is declining.

Threats

This species is under threat due to the loss of habitat caused by habitat destruction, construction of roads, and release of exotic animals. The species is also impacted by seasonal drought and over-grazing.

Conservation Actions Underway

This plant is recorded within Jabal Hafit National Park. Conservation actions include monitoring of the existing population and sites. The species is also protected under Federal Law 24 of 1999.

Eastern Marsh Helleborine
(Epipactis veratrifolia)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(iii)+2ab(iii)

Global Red List Assessment:
Least Concern (LC)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Epipactis veratrifolia is restricted to only one site in Abu Dhabi with EOO < 100 km² and AOO < 10 km². It is threatened by habitat destruction and overgrazing. There is continuous decline observed in the extent of occurrence, area of occupancy and in the extent and quality of habitat due to human invasion and habitat destruction. Extreme fluctuations in the number of mature individuals has been reported. The population size is very small. Hence the species is assessed as Critically Endangered (CR).

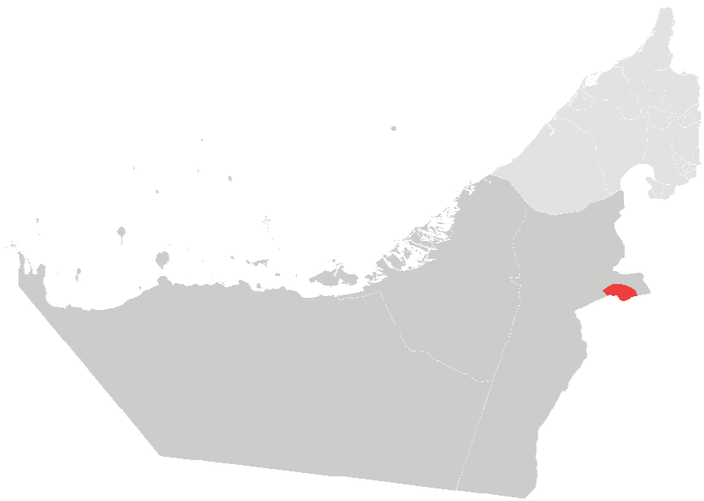
Distribution

The only occurrence of the species in Abu Dhabi is restricted to Jabal Hafit mountains at high elevations in a wadi, where there is a continuous supply of water.

Population

The population size is small and highly restricted.

Distribution Map



Eastern Marsh Helleborine *(Epipactis veratrifolia)*

Population Trend

Current population trend is stable. The current threats for the species and habitat may cause the population to decline in the near future.

Threats

The main threats are habitat loss and degradation. Over-grazing, human intrusions, over disturbance, and lack of availability of water are other threats to the species.

Conservation Actions Underway

A Conservation Action Plan has been developed for *Epipactis veratrifolia*. This plant is recorded within Jabal Hafit National Park. Conservation actions include monitoring of the existing population and sites. Setting up camera traps for the monitoring of species and awareness to the public on the importance of species are other ongoing actions. The species is also protected under Federal Law 24 of 1999. All orchids are included under Annex B of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Mountain Fig
(Ficus johannis subsp.johannis)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(iii)+2ab(iii);D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Ficus johannis is restricted to only one site in Abu Dhabi with EOO < 100 km² and AOO < 10 km². It is threatened by habitat destruction and over-grazing. There is continuous decline observed in quality of habitat due to human invasion and habitat destruction. As the number of mature individuals is < 50, the species is assessed as Critically Endangered (CR).

Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit mountains at high elevations on the mountain slopes.

Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

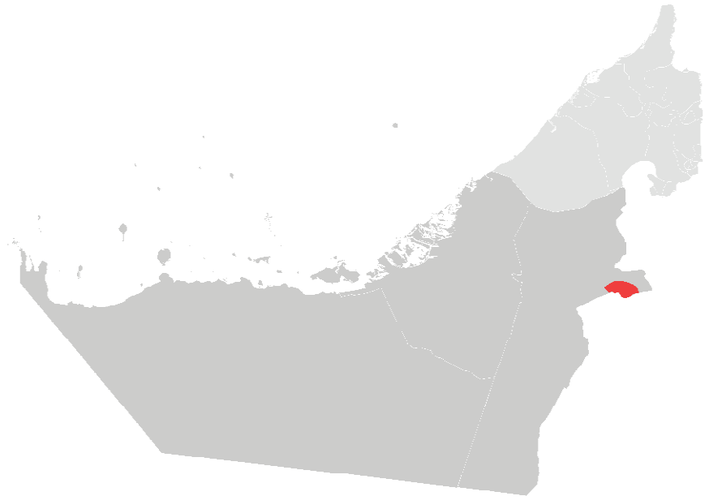
Threats

This species is under threat from habitat loss/ deterioration, drought and over-grazing.

Conservation Actions Underway

The species occurs within Jabal Hafit National Park, which is a protected area. EAD regularly undertake the monitoring of the species. The species is also protected under Federal Law 24 of 1999.

Distribution Map



Mountain Fig *(Ficus johannis subsp.johannis)*

Grewia
Grewia erythraea

EN

Local Red List Assessment Category:
Endangered B1ab(iii)+2ab(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Grewia erythraea is restricted to only one site in Abu Dhabi with a small geographic range both in the form of EOO and AOO. It is threatened by habitat destruction, overgrazing and release of exotic animals. There is continuous decline observed in quality of habitat due to human invasion and habitat destruction and hence the species is assessed as Endangered (EN).

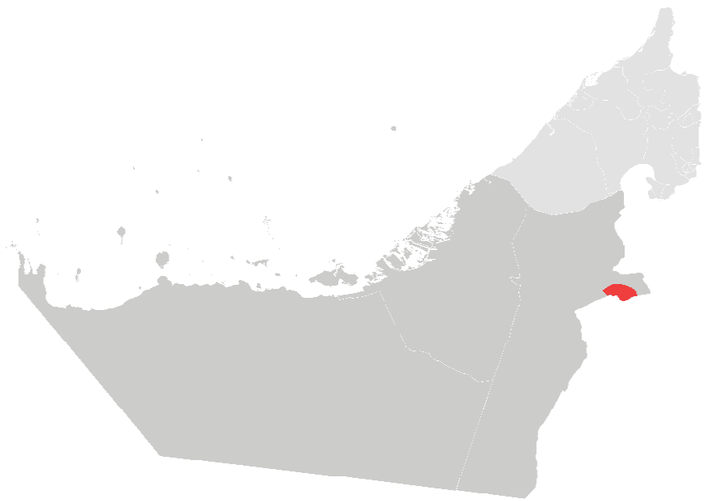
Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit mountains at high elevations.

Population

Very small and restricted population, restricted only to Jabal Hafit mountain in Abu Dhabi.

Distribution Map



Grewia erythraea

Population Trend

Current population trend is unknown.

Threats

This species is under threat from habitat loss/ deterioration, drought and over-grazing.

Conservation Actions Underway

The species occurs within Jabal Hafit National Park, which is a protected area. EAD regularly undertake the monitoring of the species. The species is also protected under Federal Law 24 of 1999.

White Saxaul
(Haloxylon persicum)

EN

Local Red List Assessment Category:
Endangered B1ab (i,ii,iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Haloxylon persicum is restricted to only one site in Abu Dhabi and threatened by habitat destruction and overgrazing. There is continuous decline observed in EOO, AOO and quality of habitat due to human invasion and habitat destruction and hence the species is assessed as Endangered (EN).

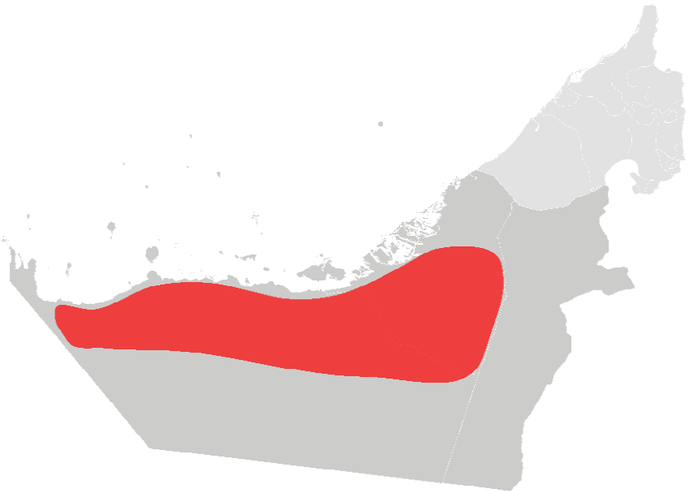
Distribution

In Abu Dhabi, the species occurs in the western region within Al Ghada Protected area with its eastern distribution limits at Al Wathba Wetland Reserve. The species is restricted to sandy areas and low dunes.

Population

Very small and restricted population.

Distribution Map



White Saxaul *(Haloxylon persicum)*

Population Trend

Current population trend is unknown.

Threats

Populations of white saxaul are facing threat due to overgrazing and habitat destruction. Cutting of the wood for firewood and charcoal is also a threat to the species. In addition, poor regeneration and high level seedling mortality in the natural conditions are aggravating the limiting factors of population expansion.

Conservation Actions Underway

A Conservation Action Plan has been developed for *Haloxylon persicum*. This plant is recorded within Al Ghada Protected area, where the habitat and species has been protected since three years. Grazing has been completely excluded from the habitats within Al Ghada Protected area and regulated outside the protected area. *Ex-situ* conservation measures are being carried out with a germination rate of 20%. Systematic monitoring of the growth and physiological condition of the *H.persicum* populations in both Al Ghada Protected area and eastern Hameem area is being carried out by EAD. The plants at Al Wathba Wetland Reserve has also been rehabilitated. The species is protected under Federal Law 24 of 1999.

Sea-lavender
(Limonium axillare)

EN

Local Red List Assessment Category:
Endangered B2b(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Limonium axillare is known from only a few sites in Abu Dhabi. The geographical range of this species is restricted, within an AOO of <500 km². The population is severely fragmented. Major threats to the species include habitat loss due to habitat destruction and urban expansion. There is continuous decline observed in the quality of habitat. Due to all these conditions the species is assessed as Endangered (EN).

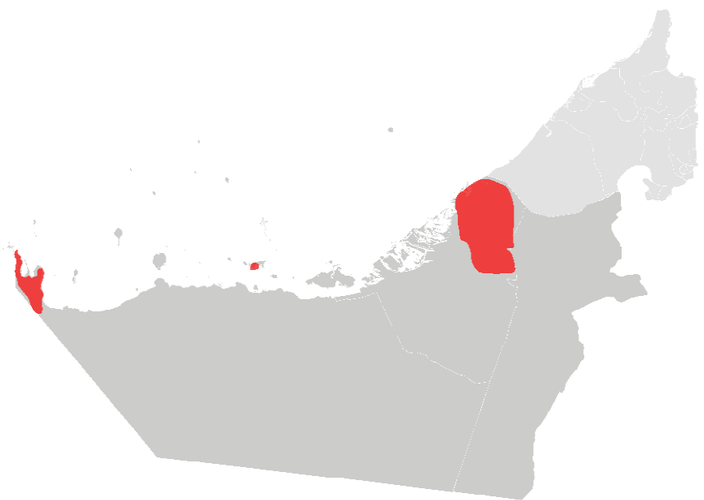
Distribution

In Abu Dhabi, the species occurs in coastal habitats in Sila Peninsula and in some of the offshore islands of Marawah Marine Biosphere Reserve. The plant is seen on saline sands.

Population

Very small and restricted population.

Distribution Map



Sea-lavender *(Limonium axillare)*

Population Trend

Current population trend is unknown.

Threats

This species is under threat from habitat loss, coastal development, drought, over-grazing and low natural regeneration.

Conservation Actions Underway

The species is recorded within the offshore island of Marawah marine biosphere reserve. The species is also protected under Federal Law 24 of 1999.

Desert Thorn
(Lycium shawii)

EN

Local Red List Assessment Category:
Endangered B1b(iii)+2b(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Lycium shawii is known from a few sites in Abu Dhabi. This species population is severely fragmented. It has an AOO of 40 km². Major threats to this species include habitat loss due to habitat destruction and urban expansion. There is continuous decline observed in the quality of habitat. EOO is also small being around 2,500 km². Hence the species is assessed as Endangered (EN).

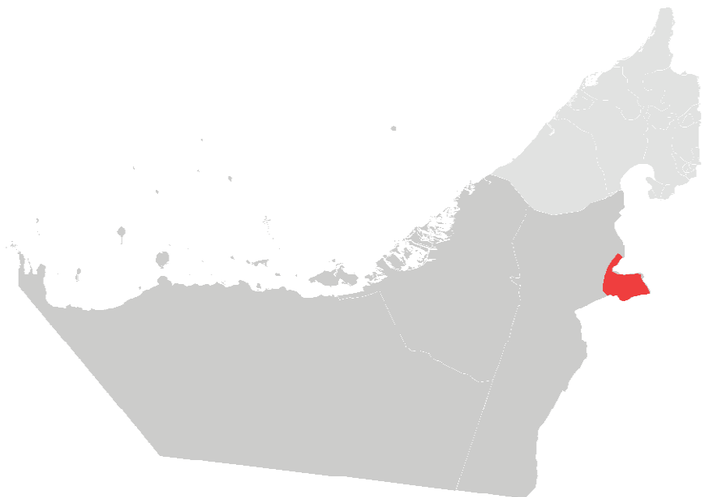
Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit mountains on gravel plains and wadis.

Population

Very small and restricted population.

Distribution Map



Desert Thorn *(Lycium shawii)*

Population Trend

Current population trend is unknown.

Threats

This species is under threat from habitat loss, coastal development, drought, over-grazing and low natural regeneration.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and the site is regularly monitored by EAD. The species is also protected under Federal Law 24 of 1999. *Ex-situ* conservation measures are ongoing and have succeeded to propagate in EAD nursery.

Egyptian Fig Marigold
(Mesembryanthemum nodiflorum)

VU

Local Red List Assessment Category:
Vulnerable B1ab(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Mesembryanthemum nodiflorum is known from a few sites in Abu Dhabi. The EOO for this species is <20,000 km². This species population is severely fragmented. Major threats to the species include habitat loss due to habitat destruction and urban expansion. There is continuous decline observed in the quality of habitat and the species is assessed as Vulnerable (VU).

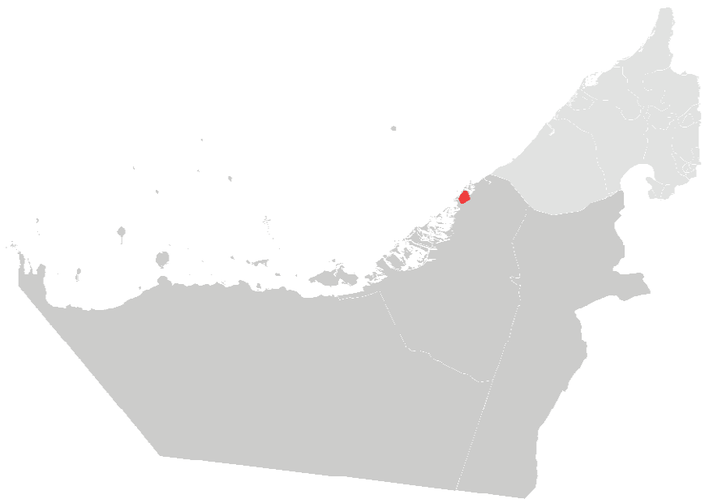
Distribution

In Abu Dhabi, the species is restricted to coastal habitats in the offshore islands on saline sands.

Population

Very small and restricted population mainly restricted to offshore islands of Abu Dhabi.

Distribution Map



Egyptian Fig Marigold *(Mesembryanthemum nodiflorum)*

Population Trend

Current population trend is unknown.

Threats

This species is under threat from habitat loss, degradation, coastal development, drought and overgrazing.

Conservation Actions Underway

There are no known conservation measures specifically for *M.nodiflorum*. The species occurs within Butinah island, which is a part of Marawah Marine Protected Area.

Wild Drumstick Tree
(Moringa peregrina)

VU

Local Red List Assessment Category:
Vulnerable D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Moringa peregrina is known only from a few sites in Abu Dhabi. This species has a small geographic range both in the form of EOO and AOO. Major threats to the species include habitat loss due to habitat destruction and urban expansion which may drive the taxon to extremely threatened category in the near future and hence the species is assessed as Vulnerable (VU).

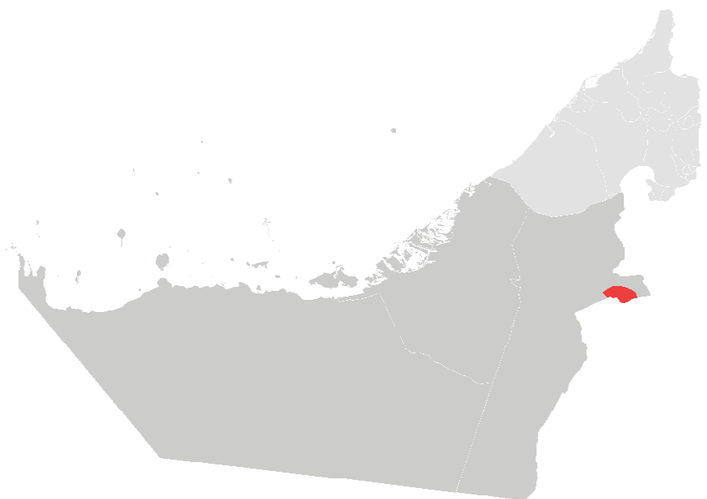
Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit mountains at high elevations on the mountain slopes .

Population

Very small and restricted population.

Distribution Map



Wild drumstick tree *(Moringa peregrina)*

Population Trend

Current population trend is unknown.

Threats

This species is under threat from habitat loss, degradation, urban expansion, drought, overgrazing, and collection of wood as fuel. Low natural regeneration in the wild is also another threat for the species.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and the site is regularly monitored by EAD. The species is also protected under Federal Law 24 of 1999. *Ex-situ* conservation measures are ongoing and have succeeded to propagate it in EAD nursery.

Dwarf Palm
(Nannorrhops ritchieana)

CR

Local Red List Assessment Category:
Critically Endangered D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Nannorrhops ritchieana is known only from a single locality in Abu Dhabi with AOO < 10 km^2. The population is severely fragmented. The ongoing threat to the known population is habitat destruction, overgrazing and observed continuous decline in the quality of the habitat. Number of mature individuals ≤50. Hence the species is assessed as Critically Endangered (CR).

Distribution

The only occurrence in Abu Dhabi is restricted to Jabal Hafit mountain at high elevations.

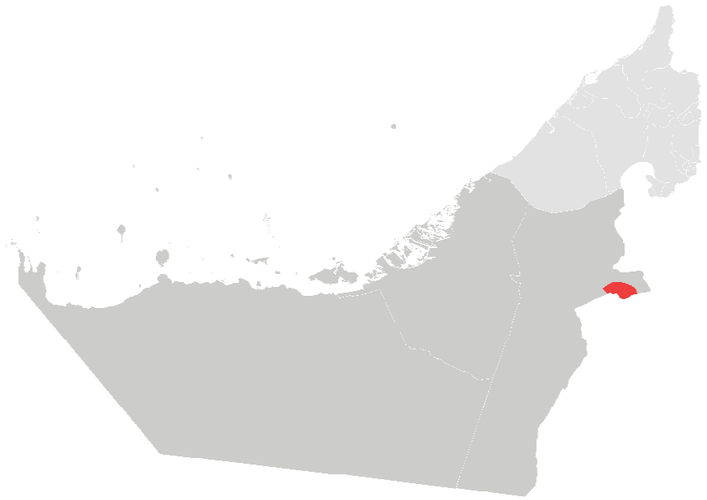
Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

Distribution Map



Dwarf Palm *(Nannorrhops ritchieana)*

Threats

The species now have a higher degree of threat. The dwarf palm is on the brink of extinction. The excessive drought in the region is a serious threat to the species apart from habitat loss. Other potential threats identified include absence of fruiting, almost zero natural regeneration, and competition from other species, possible pests and increased tourism.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and species is regularly monitored by EAD. A Conservation Action Plan has been developed for this species. Its distribution is very limited and only one individual exists in the wild. The species has been successfully propagated in different *ex-situ* facilities which result in producing more than 100 individuals. These propagated plants have the potential to rehabilitate in the wild and EAD is planning to rehabilitate some individuals in Jabal Hafit National Park. The species is also protected under Federal Law 24 of 1999.

Ochradenus
(Ochradenus arabicus)

VU

Local Red List Assessment Category:
Vulnerable B1ab(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Ochradenus arabicus is known from a few sites in Abu Dhabi. It has a restricted and small geographic range both in the form of EOO and AOO. This species population is severely fragmented. The ongoing threat to the known population is habitat destruction, overgrazing and observed continuous decline in the quality of the habitat. This supports the classification of the species as Vulnerable (VU).

Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit mountains on gravel plains and wadis.

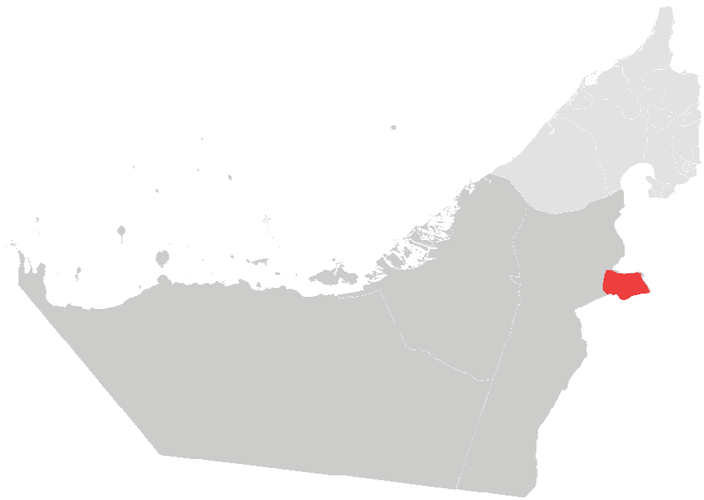
Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

Distribution Map



Ochradenus arabicus

Threats

This species is under threat from habitat loss and draught, which affect the natural regeneration of the species.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and the site is regularly monitored by EAD. The species is also protected under Federal Law 24 of 1999. *Ex-situ* conservation measures are ongoing and have succeeded to propagate in EAD nursery.

Periploca
(Periploca aphylla)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Periploca aphylla is known only from a single locality in Abu Dhabi. Both AOO and EOO are very small and the population is threatened by habitat destruction and overgrazing. Number of mature individuals is < 250 and hence the species is assessed as Endangered (EN).

Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit at high elevations on rocky wadis.

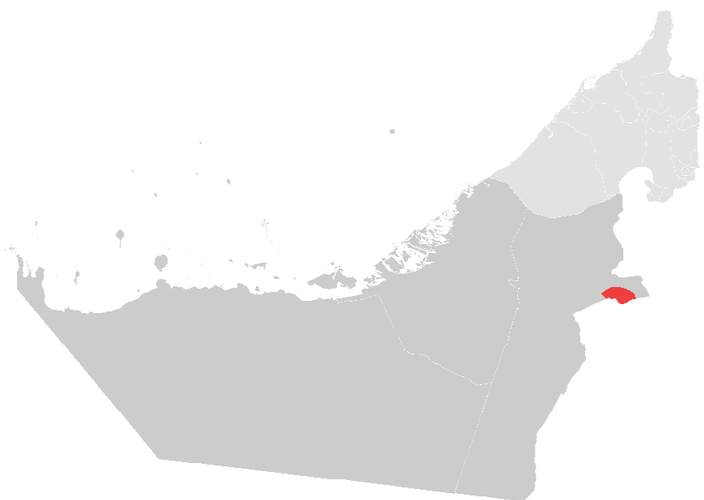
Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

Distribution Map



Periploca aphylla

Threats

This species is under threat from habitat loss, deterioration and draught, which affect the natural regeneration of the species.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and the species is regularly monitored by EAD. The species is also protected under Federal Law 24 of 1999.

Polygala
(Polygala erioptera)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Polygala erioptera is known only from a single locality in Abu Dhabi. Both AOO and EOO are very small and the population is threatened by habitat destruction and overgrazing. Number of mature individuals is <250 and hence the species is assessed as Endangered (EN).

Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit at high elevations.

Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

Distribution Map

Polygala erioptera

Threats

This species is under threat from habitat loss, deterioration and draught, which affect the natural regeneration of the species.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and is regularly monitored by EAD. The species is also protected under Federal Law 24 of 1999.

Prosopis
(Prosopis cineraria)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Prosopis cineraria (locally known as ghaf) is known from a few sites in Abu Dhabi. The known population is under threat from habitat destruction, over grazing and urban expansion. Continuous decline observed in the quality of habitat and extreme fluctuations observed in the number of mature individuals. All these conditions justify this species being categorised as Endangered (EN).

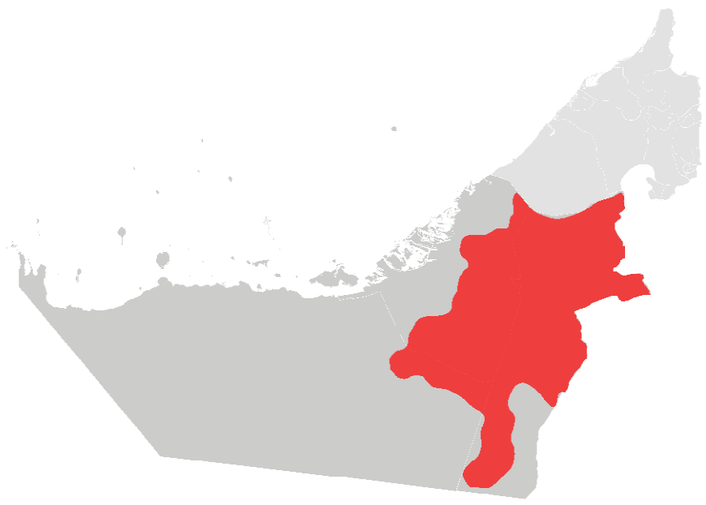
Distribution

Although planted in many areas of the emirate, natural Ghaf stands can be found mostly within the eastern parts of the emirate in Al Ain area where it occurs in high densities and gets less dense further west and south. The species is found on sand plains, dunes and wadi banks.

Population

Very small and restricted population.

Distribution Map



Prosopis cineraria

Population Trend

Current population trend is unknown.

Threats

This species is under threat from habitat loss, drought, over-grazing and low natural regeneration.

Conservation Actions Underway

A Conservation Action Plan has been developed for *P. cineraria*, and the species occurs in some protected areas with very low presence. Like all the other native trees, this species is also protected by Federal Law 24 of 1999. The species cannot be cut and must be translocated if necessary. *Ex-situ* conservation measures are ongoing and have succeeded to propagate it in EAD nursery and plants are used in different planting projects and works. EAD undertook extensive mapping of all the trees in Al Ain region which counted over 5,400 individuals. As a follow up of this exercise, EAD will undertake physical tagging of some trees and also protect some of the most dense areas.

Rhanterium
(Rhanterium epapposum)

VU

Local Red List Assessment Category:
Vulnerable B1ab(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Rhanterium epapposum is known from a few sites in Abu Dhabi with a small geographic range both in the form of EOO and AOO, the first being < 20,000 km^2. The population is severely fragmented. The ongoing threat to the known population is habitat destruction, overgrazing and observed continuous decline in the quality of the habitat. This supports the classification of the species as Vulnerable (VU).

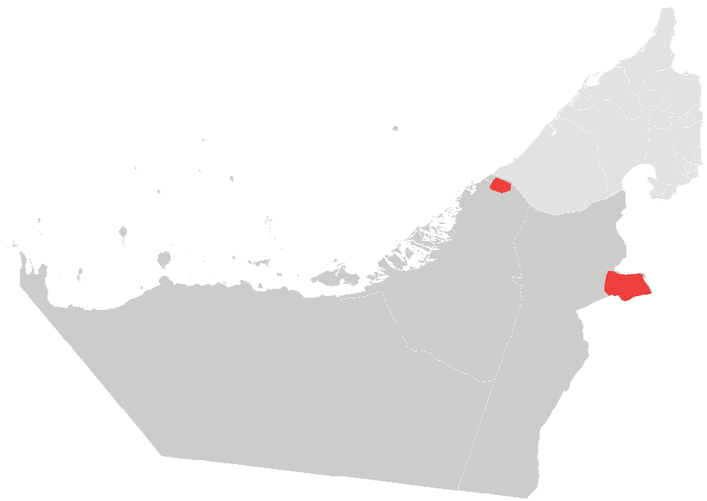
Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit mountains and coastal white sands near Ghantooth. The species is also found in few localised locations in south and southwest of Sweihan. The species is found on sand and gravel plains, low sand dunes and hillsides.

Population

Very small and restricted population.

Distribution Map



Rhanterium epapposum

Population Trend

Current population trend is unknown.

Threats

This species is under threat from habitat loss, coastal development, drought and over-grazing.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and the site is regularly monitored by EAD. *Ex-situ* conservation measures are ongoing and have succeeded to propagate it in EAD nursery. The species is also protected under Federal Law 24 of 1999.

Schweinfurthia
(Schweinfurthia imbricata)

CR

Local Red List Assessment Category:
Critically Endangered B1ab(iii)+2ab(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Schweinfurthia imbricata is known only from a single locality in Abu Dhabi with a small geographic range both in the form of EOO and AOO. The population is severely fragmented and threatened by habitat destruction and overgrazing. As the number of mature individuals <250, the species is assessed as Critically Endangered (CR).

Distribution

The only occurrence of the species in Abu Dhabi is restricted to the gravel plain in the eastern region of the emirate. The species is recorded only in the south-eastern parts of Jabal Hafit National Park.

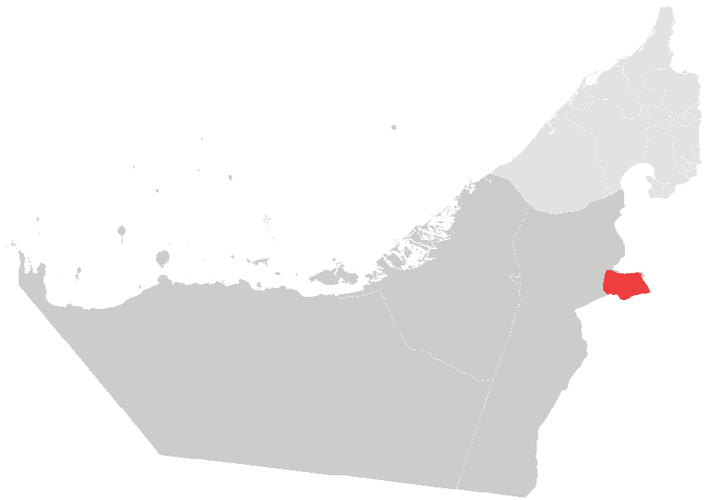
Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

Distribution Map



Schweinfurthia imbricata

Threats

This species is under threat from habitat loss, overgrazing and draught, which affect the natural regeneration of the species.

Conservation Actions Underway

There are no known conservation measures for *S.imbricata*. The species is protected under Federal Law 24 of 1999.

Teucrium
(Teucrium stocksianum)

EN

Local Red List Assessment Category:
Endangered B1ab(iii)+2ab(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Teucrium stocksianum is known only from a single locality in Abu Dhabi. This species has a small geographic range both in the form of EOO and AOO. The population is severely fragmented and threatened by habitat destruction and overgrazing. There is also continuous decline observed in the quality of habitat, hence the species is assessed as Endangered (EN).

Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit at high elevations.

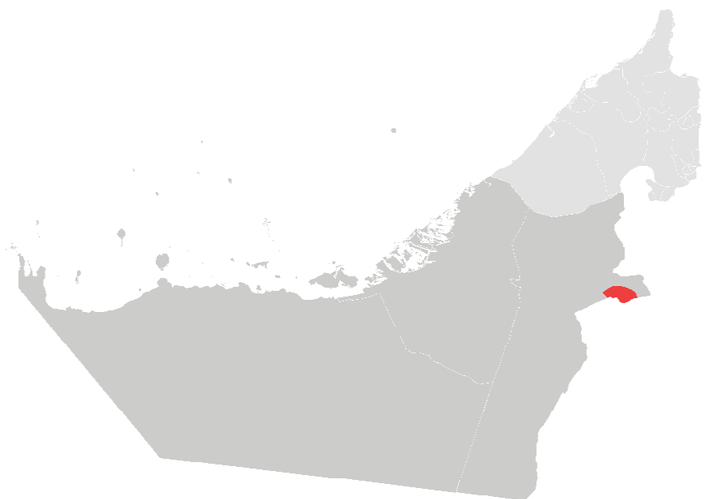
Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

Distribution Map



Teucrium stocksianum

Threats

This species is under threat from habitat loss and draught, which affect the natural regeneration of the species. Additional threats are from collection for medicinal uses.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and the site is regularly monitored by EAD. *Ex-situ* conservation measures are ongoing and have succeeded to propagate it in EAD nursery. The species is also protected under Federal Law 24 of 1999.

Southern Cattail
(Typha domingensis)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Typha domingensis is known only from a single locality in Abu Dhabi. AOO and EOO are very small and the population is threatened by habitat destruction and overgrazing. Number of mature individuals is <250 and hence the species is assessed as Endangered (EN).

Distribution

Main occurrence in Abu Dhabi is restricted to Jabal Hafit at high elevations.

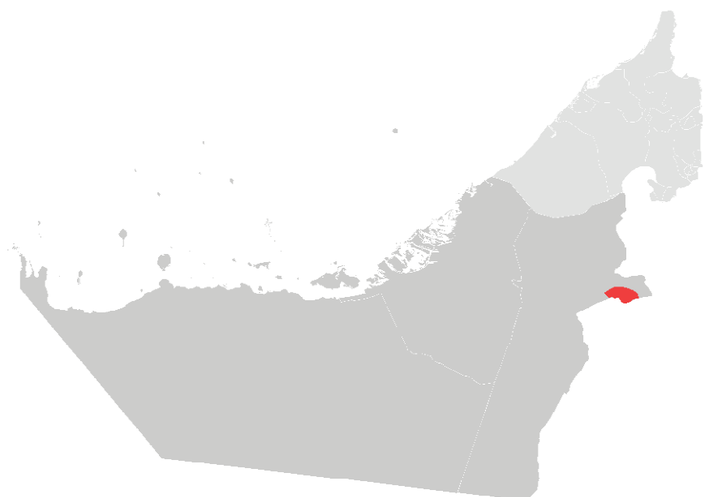
Population

Very small and restricted population.

Population Trend

Current population trend is unknown.

Distribution Map



Southern Cattail (*Typha domingensis*)

Threats

This species is under threat from habitat loss, deterioration and drought as it is highly dependent on permanent water availability, which affect the natural regeneration of the species.

Conservation Actions Underway

The species occurs in Jabal Hafit National Park, which is a protected area and the site is regularly monitored by EAD. The species is also protected under Federal Law 24 of 1999.

Acacia
(Vachellia flava)

EN

Local Red List Assessment Category:
Endangered D

Global Red List Assessment:
Least Concern (LC)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Vachellia flava is known only from two sites in Abu Dhabi. AOO and EOO are very small and the population is threatened by habitat destruction and overgrazing. Number of mature individuals is <250 and hence the species is assessed as Endangered (EN).

Distribution

Main occurrence in Abu Dhabi is restricted to only two places within Sweihan area in the eastern part of the emirate and the Arabian Oryx Protected Area in the south eastern corner of the emirate. The species is found on sand and gravel plains.

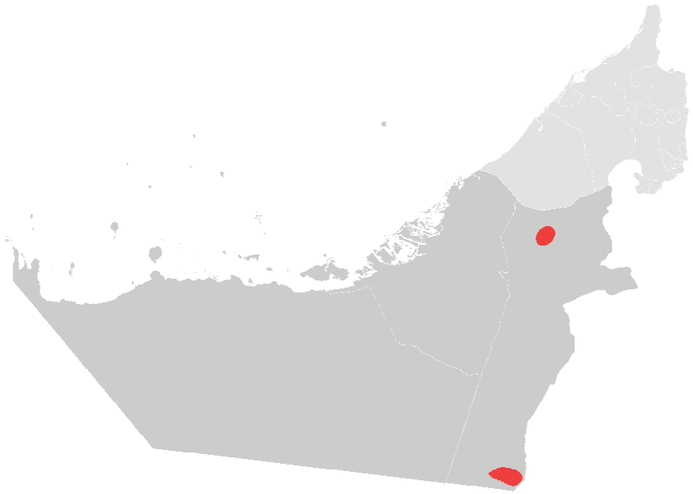
Population

Very small and restricted population in two sites.

Population Trend

Current population trend is unknown.

Distribution Map



Vachellia flava

Threats

This species is under threat from habitat loss/ deterioration, drought, over-grazing and low natural regeneration.

Conservation Actions Underway

A Conservation Action Plan has been developed for *V. flava*. The species is conserved within Arabian Oryx Protected Area and the site is regularly monitored by EAD. Like all the other native trees, this species is also protected by Federal Law 24 of 1999. The species cannot be cut and must be translocated if necessary.

Umbrella Thorn Acacia
(Vachellia tortilis)

EN

Local Red List Assessment Category:
Endangered B2ab(iii)

Global Red List Assessment:
2018 Not Evaluated (NE)

Assessors:
Sakkir, S., Kabshawi, M.

Rationale

Vachellia tortilis (locally known as Samar) is present in a restricted geographical range with an EOO of 16,500 km² and AOO of <500 km². The ongoing threat to the known population is the decline in the quality of the habitat. This supports the classification of the species as Endangered (EN).

Distribution

Main occurrence in Abu Dhabi is restricted to the gravel plains in the eastern parts of the emirate in Al Ain and Jabal Hafit mountain. Another small population of plants were also recorded in Sila in the western parts of the emirate. The species is found on sand and gravel plains.

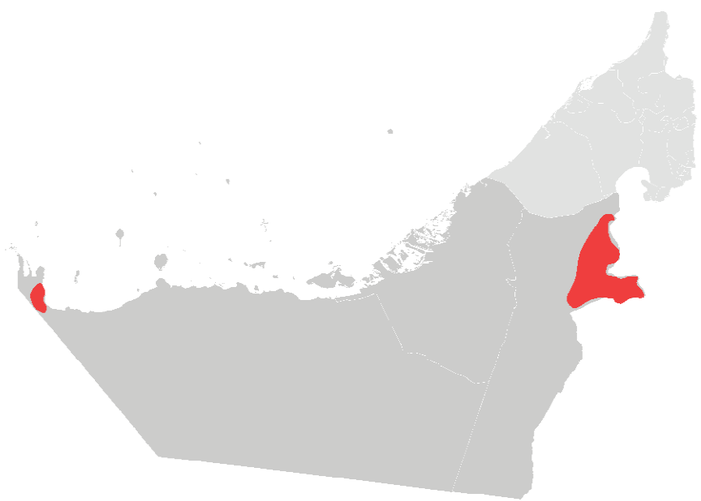
Population

Very small and restricted population in two sites.

Population Trend

Current population trend is unknown.

Distribution Map



Umbrella Thorn Acacia *(Vachellia tortilis)*

Threats

This species is under threat from habitat loss/ degradation, urban expansion, over-grazing, collection of wood as fuel and low natural regeneration in the wild population.

Conservation Actions Underway

A Conservation Action Plan has been developed for *V.tortilis*. The species is conserved within Jabal Hafit National Park the site is regularly monitored by EAD. Like all the other native trees, this species is protected by Federal Law 24 of 1999. The species cannot be cut and must be translocated if necessary. *Ex-situ* conservation measures are ongoing and have succeeded to propagate it in EAD nursery and reintroduction at different sites has been underway.

5.0

Next Steps

Salim Javed, Jon Paul Rodriguez & Ariany Garcia-Rawlins

5.1 Prioritising Conservation Action for Threatened Species

As indicated in the regional guidelines (IUCN, 2012b) the assessment of extinction risk and setting conservation priorities are two related but different processes. Assessment of extinction risk generally precedes the setting of priorities, and has the purpose of estimating extinction risk by following rules that are objective, transparent and repeatable. Setting conservation priorities, on the other hand, which normally includes the assessment of extinction risk, also takes into account other factors such as ecological, phylogenetic, historical, or cultural preferences for some taxa over others, as well as the probability of success of conservation actions, availability of funds or personnel to carry out such actions, and legal frameworks for conservation of threatened taxa (Miller *et al.,* 2006; Miller *et al.,* 2007).

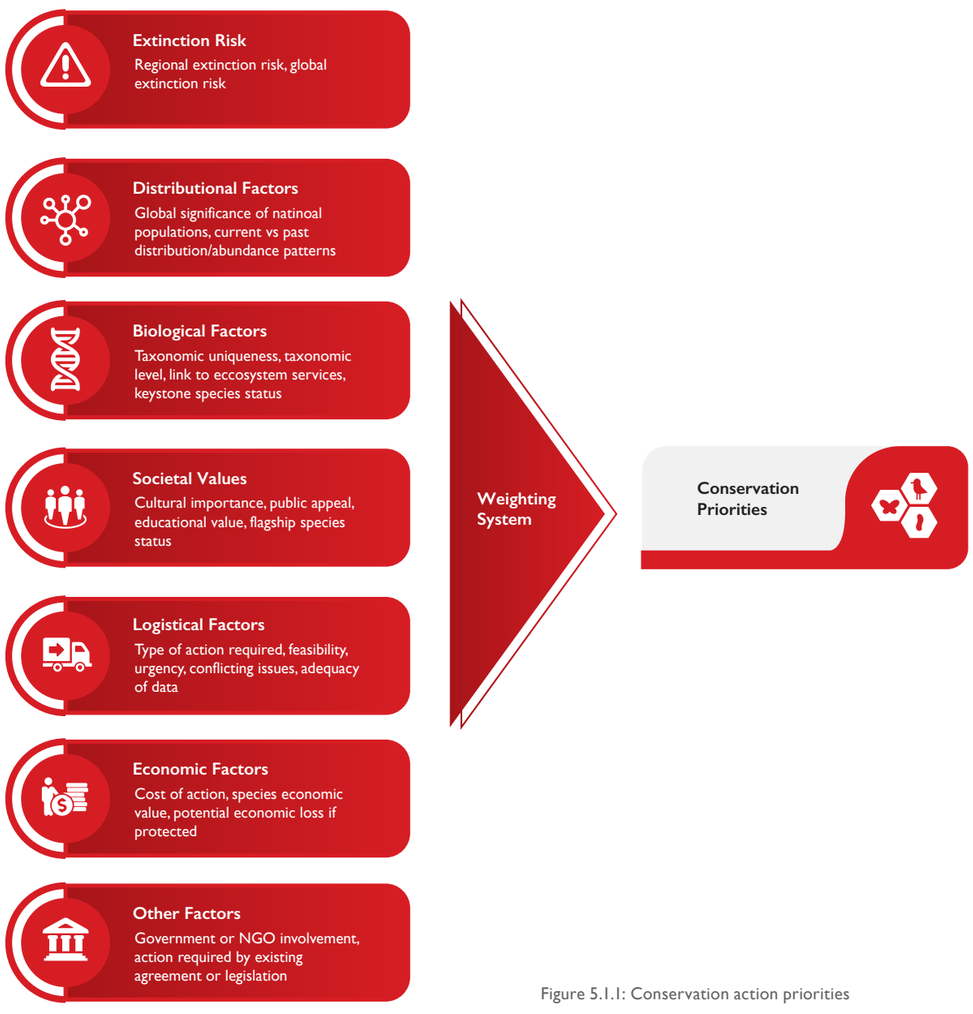


Figure 5.1.1: Conservation action priorities

In the context of regional risk assessments, a number of additional pieces of information are valuable for setting conservation priorities. For example, it is important to consider not only conditions within the region but also the status of the taxon from a global perspective and the proportion of the global population that occurs within the region. Consequently, it is recommended that any publication that results from a regional assessment process should include at least three measures: (1) the regional Red List Category, (2) the global Red List Category, and (3) an estimate of the proportion (%) of the global population occurring within the region.

Future steps in Abu Dhabi are to identify species or groups of species that will be the focus of the development of action plans, and mobilise the resources required to implement them. The ultimate purpose of this effort is to improve the status of threatened species and reduce extinction risk in the emirate.

5.2 Red Listing of Ecosystems

Following the publication of Abu Dhabi Red List of Species, EAD will continue to partner with IUCN SSC and Provita towards the development of the Red List of Ecosystems (RLE), a framework for identification of ecosystems at risk (Rodríguez *et al.,* 2015; Keith *et al.,* 2013), similar to the Red List of Species. Development of Red List of Ecosystems is a logical next step, not only to establish threatened ecosystems but also to understand how species status are connected to the state of their habitats. The process proposed to take this forward is similar to the one described in this publication and would be jointly undertaken by EAD and Provita team.

5.3 Integrating Species and Ecosystem Red Lists into Spatial Conservation Planning

Red list of species combined with the Red list of ecosystems provide an ideal platform for spatial conservation planning and provide a robust and scientifically sound basis for protection of species, habitats and ecosystem, by preventing and diverting any incompatible land use and developmental activities away from important and mostly biologically rich and diverse areas.

As the current habitat maps are in the process of being revised and a new habitat maps are likely to be ready by mid 2020, it will be possible to measure change over the past five years, and use this information to assign risk categories. Combined with time series of satellite images available to EAD, as well as projections for future human development, predictions of ecosystem change can be refined. This will be also framed within the EAD Strategy (2021-2025) soon to be published. Integration of the RLE and RLS within EAD strategy would further inform biodiversity conservation priorities for the emirate.

5.4 Developing Red List Indices

One of the most powerful applications of Red Lists if to repeat the assessment periodically, every 5-10 years to calculate Red List Indexes (RLI) – an average measure of extinction risk of a group of species (Butchart *et al.,* 2007; Bubb *et al.,* 2009). If all species in a group are LC, RLI is equal to one, while if all of them are EX, the value of RLI is zero. A method known as backcasting, also allows for inferring the past status of species and estimating their past Red List category without needing to wait 5-10 years for a future assessment. Development of RLI for Abu Dhabi's species will be the focus of future analyses.

6.0

Red List Assessment Team

Red List Assessment Team

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7.0

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7.2 References *(Species-Specific)*

Arabian Gazelle *(Gazella arabica)*

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Dwarf palm *(Nannorrhops ritchieana)*

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Southern cattail *(Typha domingensis)*

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Umbrella thorn acacia *(Vachellia tortilis)*

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8.0

Glossary

Glossary

AEWA	Agreement on the Conservation of African-Eurasian Migratory Waterbirds
AGEDI	Abu Dhabi Global Environmental Data Initiative
AOO	Area of Occupancy
CCCAO	The Coordination Committee for the Conservation of the Arabian Oryx
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Conservation of Migratory Species
CR	Critically Endangered
DD	Data Deficient
EAD	Environment Agency – Abu Dhabi
EBSA	Ecologically or Biologically Significant Marine Areas
EISOM	Environmental Information, Science & Outreach Management
EN	Endangered
EOO	Extent of Occurrence
EPA	Environment and Protected Areas Authority
EU	European Union
EX	Extinct
EW	Extinct in the wild
IFHC	International Fund for Houbara Conservation
IBAs	Important Bird Areas
IOSEA	Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia.
IUCN	International Union for Conservation of Nature
KPI	Key Performance Indicators
LC	Least Concern
MsAP	Multispecies Action Plan
MMBR	Marawah Marine Biosphere Reserve
MOU	Memorandum of understanding
MPA	Marine Protected Area
NA	Not Applicable
NE	Not evaluated
NT	Near Threatened
NSAID	Nonsteroidal anti-inflammatory drugs.
RE	Regionally Extinct
RLE	Red List of Ecosystems
RLI	Red List Indexes
RSG	Re-introduction Specialist Group
SOE	State of the Environment
SSC	Species Survival Commission
TMBS	Terrestrial and Marine Biodiversity Sector
UAE	United Arab Emirates
UNEP	United Nations Environment Programme
VU	Vulnerable
WWF	World Wildlife Fund

9.0

Appendices

APPENDIX 1. Threatened taxa in the Abu Dhabi Emirate

Taxa	Order	Family	Scientific Name	Common English Name	IUCN Threat Category	IUCN Threat Criteria	Local IUCN Red List Category	Local IUCN Red List Criteria
Mammal_T	CARNIVORA	Felidae	*Felis lybica gordoni*	Gordon's Wildcat	LC		CR	B1ab(iii)+2ab(iii)
Mammal_T	CARNIVORA	Felidae	*Felis margarita thinobia*	Sand Cat	LC		EN	D
Mammal_T	CARNIVORA	Canidae	*Vulpes cana*	Blanford's Fox	LC		CR	B1ab(iii); D
Mammal_T	CARNIVORA	Canidae	*Vulpes rueppellii*	Rüppell's Fox	LC		EN	D
Mammal_T	ARTIODACTYLA	Bovidae	*Oryx leucoryx*	Arabian Oryx	VU	D1	VU	D1
Mammal_T	ARTIODACTYLA	Bovidae	*Gazella marica*	Arabian Sand Gazelle	VU	C2a(i)	VU	C2a(i); D1
Mammal_T	ARTIODACTYLA	Bovidae	*Gazella arabica*	Arabian Gazelle	VU	C2a(i)	VU	B1ab(iii)+2ab(iii)
Mammal_T	ARTIODACTYLA	Bovidae	*Arabitragus jayakari*	Arabian Tahr	EN	C2a(i)	CR	B1ab(iii); D
Mammal_M	CETACEA	Delphinidae	*Sousa plumbea*	Indian Ocean humpback dolphin	EN	A2cd+3cd+4cd	VU	D1
Mammal_M	CETACEA	Phocoenidae	*Neophocaena phocaenoides*	Indo-Pacific Finless porpoise	VU	A2cde+3cde+4cde	EN	D
Mammal_M	SIRENIA	Dugongidae	*Dugong dugon*	Dugong	VU	A2bcd+4bcd	VU	B2ab(iii,v)
Mammal_M	TESTUDINES	Cheloniidae	*Eretmochelys imbricata*	Hawksbill turtle	CR	A2bd	EN	B2ab(iii)
Birds	ANSERIFORMES	Anatidae	*Mareca strepera*	Gadwall	LC		EN	D
Birds	ANSERIFORMES	Anatidae	*Anas acuta*	Northern Pintail	LC		VU°	D1
Birds	ANSERIFORMES	Anatidae	*Spatula querquedula*	Garganey	LC		VU°	D
Birds	ANSERIFORMES	Anatidae	*Aythya nyroca*	Ferruginous Duck	NT	A2cd+3cd+4cd	VU	D1
Birds	ANSERIFORMES	Anatidae	*Aythya fuligula*	Tufted Duck	LC		EN°	D
Birds	GALLIFORMES	Phasianidae	*Ammoperdix heyi*	Sand Partridge	LC		VU°	D
Birds	PODICIPEDIFORMES	Podicipedidae	*Tachybaptus ruficollis*	Little Grebe	LC		VU	D1
Birds	PODICIPEDIFORMES	Podicipedidae	*Podiceps nigricollis*	Black-necked Grebe	LC		VU°	D
Birds	PHAETHONTIFORMES	Phaethontidae	*Phaethon aethereus*	Red-billed Tropicbird	LC		EN	D
Birds	PELECANIFORMES	Threskiornithidae	*Plegadis falcinellus*	Glossy Ibis	LC		VU°	D
Birds	PELECANIFORMES	Threskiornithidae	*Platalea leucorodia*	Eurasian Spoonbill	LC		EN	D
Birds	PELECANIFORMES	Ardeidae	*Nycticorax nycticorax*	Black-crowned Night Heron	LC		VU°	D1
Birds	PELECANIFORMES	Ardeidae	*Butorides striata*	Green-backed Heron	LC		VU	D1
Birds	SULIFORMES	Phalcrocoracidae	*Phalacrocorax nigrogularis*	Socotra Cormorant	VU	A2bce+3ce+4b-ce;B2ab(i,ii,iii,iv,v)	EN	B2ab(iii)c(i,ii,iii,iv)
Birds	ACCIPITRIFORMES	Pandionidae	*Pandion haliaetus*	Western Osprey	LC		EN	D
Birds	ACCIPITRIFORMES	Accipitridae	*Neophron percnopterus*	Egyptian Vulture	EN	A2bcde+3bcde	CR	C1+2a(i,ii); D
Birds	ACCIPITRIFORMES	Accipitridae	*Torgos tracheliotos*	Lappet-faced Vulture	EN	A2bcd+3bcd	CR	D
Birds	ACCIPITRIFORMES	Accipitridae	*Clanga clanga*	Greater Spotted Eagle	VU	C2a(ii)	CR	D
Birds	ACCIPITRIFORMES	Accipitridae	*Aquila fasciata*	Bonelli's Eagle	LC		EN°	D
Birds	ACCIPITRIFORMES	Accipitridae	*Circus aeruginosus*	Western Marsh Harrier	LC		VU°	D
Birds	ACCIPITRIFORMES	Accipitridae	*Circus macrourus*	Pallid Harrier	NT	A2cde+3cde+4cde	VU°	D
Birds	OTIDIFORMES	Otidae	*Chlamydotis macqueenii*	Asian Houbara	VU	A4acd	EN	D
Birds	GRUIFORMES	Rallidae	*Rallus aquaticus*	Water Rail	LC		EN°	D
Birds	CHARADRIIFORMES	Charadriidae	*Vanellus gregarius*	Sociable Lapwing	CR	A3bcd+4bcd	CR	D
Birds	CHARADRIIFORMES	Scolopacidae	*Limosa limosa*	Black-tailed Godwit	NT	A2bcde+3bcde+4bcde	VU	D1
Birds	CHARADRIIFORMES	Scolopacidae	*Calidris tenuirostris*	Great Knot	VU	A2bc+3bc+4bc	CR	D
Birds	CHARADRIIFORMES	Glareolidae	*Cursorius cursor*	Cream-coloured Courser	LC		CR	C2a(i); D
Birds	CHARADRIIFORMES	Laridae	*Sternula saundersi*	Saunders's Tern	LC		CR	D
Birds	STRIGIFORMES	Tytonidae	*Tyto alba*	Barn Owl	LC		CR	D
Birds	STRIGIFORMES	Strigidae	*Bubo ascalaphus*	Pharaoh Eagle-Owl	LC		CR	C2a(i); D
Birds	FALCONIFORMES	Falconidae	*Falco concolor*	Sooty Falcon	VU	C2a(ii)	CR	A2cde; C2a(i); D
Birds	PASSERIFORMES	Emberizidae	*Emberiza cineracea*	Cinereous Bunting (Eastern)	NT	C1	EN°	D
Birds	CHARADRIIFORMES	Dromadidae	*Dromas ardeola*	Crab Plover	LC		VU	B1ab(iii)
Reptiles	SQUAMATA	Agamidae	*Uromastyx aegyptia*	Egyptian Spiny-tailed lizard	VU	A2abcd+4abcd	VU	A2cd
Reptiles	SQUAMATA	Gekkonidae	*Teratoscincus keyserlingii*	Wonder gecko	NE		CR	A3cd
Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Androctonus crassicauda*	Arabian Black Fat-tailed Scorpion	NE		VU	D1
Invertebrates	SOLIFUGAE	Galeodidae (Wind Scorpions)	*Galeodes arabs*	Camel Spider	NE		EN	D
Invertebrates	LEPIDOPTERA (MOTHS & BUTTERFLIES)	Papilionidae	*Papilio machaon*	Common Swallow tailed butterfly	NE		VU	B1ab(iii,v)
Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Vachoniolus globimanus*	Yellow Desert Scorpion	NE		CR	D
Plants	FABALES	Fabaceae	*Vachellia flava*	Acacia	LC		EN	D

Taxa	Order	Family	Scientific Name	Common English Name	IUCN Threat Category	IUCN Threat Criteria	Local IUCN Red List Category	Local IUCN Red List Criteria
Plants	FABALES	Fabaceae	*Vachellia tortilis*	Umbrella Thorn Acacia	NE		EN	B2ab(iii)
Plants	MALPIGHIALES	Malphigiaceae	*Acridocarpus orientalis*	Oriental Cherry	NE		CR	B1ab(iii,v)
Plants	POLYPODIALES	Pteridaceae	*Adiantum capillus-veneris*	Maiden Hairfern	LC		CR	B1ab(i,ii, iii,v)
Plants	GENTIANALES	Apocynaceae	*Desmidorchis arabica*	Caralluma	NE		CR	B2ab(iii); C2a(i)
Plants	ASPARAGALES	Asparagaceae	*Dipcadi biflorum*	Dipcadi lily	NE		CR	C2a(i); D
Plants	ASPARAGALES	Orchidaceae	*Epipactis veratrifolia*	Eastern Marsh Helleborine	LC		CR	B1ab(iii)+2ab(iii)
Plants	ROSALES	Moraceae	*Ficus johannis subsp. johannis*	Mountain fig	NE		CR	B1ab(iii)+2ab(iii);D
Plants	MALVALES	Malvaceae	*Grewia erythraea*	Grewia	NE		EN	B1ab(iii)+ 2ab(iii)
Plants	CARYOPHYLLALES	Amaranthaceae	*Haloxylon persicum*	White saxaul	NE		EN	B1ab(i,ii,iii)
Plants	CARYOPHYLLALES	Aizoaceae	*Mesembryanthemum nodiflorum*	Egyptian fig marigold	NE		VU	B1ab(iii)
Plants	ARECALES	Arecaceae	*Nannorrhops ritchieana*	Dwarf palm	NE		CR	D
Plants	FABALES	Fabaceae	*Prosopis cineraria*	Prosopis	NE		EN	D
Plants	LAMIALES	Plantaginaceae	*Schweinfurthia imbricata*	Schweinfurthia	NE		CR	B1ab(iii)+2ab(iii)
Plants	BRASSICALES	Moringaceae	*Moringa peregrina*	Wild drumstick tree	NE		VU	D
Plants	LAMIALES	Lamiaceae	*Teucrium stocksianum*	Teucrium	NE		EN	B1ab(iii)+2ab(iii)
Plants	POALES	Poaceae	*Typha domingensis*	Southern cat-tail	LC		EN	D
Plants	CARYOPHYLLALES	Plumbaginaceae	*Limonium axillare*	Sea laveander	NE		EN	B2b(iii)
Plants	SOLANALES	Solanaceae	*Lycium shawii*	Desert thorn	NE		EN	B1b(iii)+2b(iii)
Plants	BRASSICALES	Resedaceae	*Ochradenus arabicus*	Ochradenus	NE		VU	B1ab(iii)
Plants	GENTIANALES	Apocynaceae	*Periploca aphylla*	Periploca	NE		EN	D
Plants	FABALES	Polygalaceae	*Polygala erioptera*	Polygala	NE		EN	D
Plants	ASTERALES	Asteraceae	*Rhanterium epapposum*	Rhanterium	NE		VU	B1ab(iii)

APPENDIX 2. List of all taxa assessed in Abu Dhabi Emirate

Taxa	Order	Family	Scientific Name	Common English Name	IUCN Threat Category	IUCN Threat Criteria	Local IUCN Red List Category	Local IUCN Red List Criteria	Native/ Non Native/ Introduced/ Domesticated
Mammal_T	CARNIVORA	Felidae	*Felis lybica gordoni*	Gordon's Wildcat	LC		CR	B1ab(iii)+2ab(iii)	Native
Mammal_T	CARNIVORA	Felidae	*Felis margarita thinobia*	Sand Cat	LC		EN	D.	Native
Mammal_T	CARNIVORA	Felidae	*Caracal carcal*	Caracal	LC		DD		Native
Mammal_T	CARNIVORA	Canidae	*Vulpes vulpes arabica*	Arabian Red Fox	LC		LC		Native
Mammal_T	CARNIVORA	Canidae	*Vulpes cana*	Blanford's Fox	LC		CR	B1ab(iii); D	Native
Mammal_T	CARNIVORA	Canidae	*Vulpes rueppellii*	Rüppell's Fox	LC		EN	D	Native
Mammal_T	CARNIVORA	Mustelidae	*Mellivora capensis*	Honey Badger	LC		DD		Native
Mammal_T	CARNIVORA	Herpestidae	*Ichneumia albicauda*	White-tailed Mongoose	LC		DD		Native
Mammal_T	ARTIODACTYLA	Bovidae	*Oryx leucoryx*	Arabian Oryx	VU	D1	VU	D1	Native
Mammal_T	ARTIODACTYLA	Bovidae	*Gazella marica*	Arabian Sand Gazelle	VU	C2a(i)	VU	C2a(i); D1	Native
Mammal_T	ARTIODACTYLA	Bovidae	*Gazella arabica*	Arabian Gazelle	VU	C2a(i)	VU	B1ab(iii)+2ab(iii)	Native
Mammal_T	ARTIODACTYLA	Bovidae	*Arabitragus jayakari*	Arabian Tahr	EN	C2a(i)	CR	B1ab(iii); D	Native
Mammal_T	RODENTIA	Muridae	*Acomys dimidatus*	Arabian Spiny Mouse	LC		DD		Native
Mammal_T	RODENTIA	Muridae	*Gerbillus dasyurus*	Wagner's Gerbil	LC		DD		Native
Mammal_T	RODENTIA	Muridae	*Gerbillus nanus*	Baluchistan Gerbil	LC		DD		Native
Mammal_T	RODENTIA	Muridae	*Meriones crassus*	Sundevall's Jird	LC		DD		Native
Mammal_T	RODENTIA	Muridae	*Meriones arimalius*	Arabian Jird	LC		DD		Native
Mammal_T	RODENTIA	Muridae	*Mus musculus*	House Mouse	LC		NA		Introduced
Mammal_T	RODENTIA	Muridae	*Rattus norvegicus*	Brown Rat	LC		NA		Introduced
Mammal_T	RODENTIA	Muridae	*Rattus rattus*	Black Rat	LC		NA		Introduced
Mammal_T	RODENTIA	Muridae	*Gerbillus cheesmani*	Cheesman's Gerbil	LC		LC		Native
Mammal_T	RODENTIA	Dipodidae	*Jaculus jaculus*	Lesser Jerboa	LC		LC		Native
Mammal_T	RODENTIA	Hystricidae	*Hystrix indica*	Indian Crested Porcupine	LC		DD		Native

Taxa	Order	Family	Scientific Name	Common English Name	IUCN Threat Category	IUCN Threat Criteria	Local IUCN Red List Category	Local IUCN Red List Criteria	Native/ Non Native/ Introduced/ Domesticated
Mammal_T	RODENTIA	Sciuridae	*Funambulus palmarum*	Indian Palm Squirrel	LC		NA		Introduced
Mammal_T	LAGOMORPHA	Leporidae	*Lepus capensis*	Desert Hare	LC		LC		Native
Mammal_T	ERINACEOMORPHA	Erinaceidae	*Paraechinus hypomelas*	Brandt's Hedgehog	LC		DD		Native
Mammal_T	ERINACEOMORPHA	Erinaceidae	*Paraechinus aethiopicus*	Ethiopian Hedgehog	LC		LC		Native
Mammal_T	SORICOMORPHA	Soricidae	*Suncus murinus*	House Shrew	LC		NA		Introduced
Mammal_T	SORICOMORPHA	Soricidae	*Suncus etruscus*	Savi's Pygmy Shrew	LC		DD		Native
Mammal_T	CHIROPTERA	Pteropodidae	*Rousettus aegyptiacus*	Egyptian Fruit Bat	LC		DD		Native
Mammal_T	CHIROPTERA	Rhinopomatidae	*Rhinopoma muscatellum*	Muscat Mouse-tailed Bat	LC		DD		Native
Mammal_T	CHIROPTERA	Hipposideridae	*Triaenops persicus*	Persian Leaf-nosed Bat	LC		DD		Native
Mammal_T	CHIROPTERA	Hipposideridae	*Asellia tridens*	Trident Leaf-nosed Bat	LC		DD		Native
Mammal_T	CHIROPTERA	Vespertilionidae	*Otonycteris hemprichii*	Hemprich's long-eared Bat	LC		DD		Native
Mammal_T	CHIROPTERA	Vespertilionidae	*Eptesicus nasutus*	Sind Serotine Bat	LC		DD		Native
Mammal_T	CHIROPTERA	Vespertilionidae	*Pipistrellus kuhlii*	Kuhl's Pipistrelle	LC		DD		Native
Mammal_T	CHIROPTERA	Emballonuridae	*Taphozous nudiventris*	Naked -bellied Tomb Bat	LC		DD		Native
Mammal_T	HYRACOIDEA	Procaviidae	*Procavia capensis*	Cape Hyrax	LC		NA		Introduced
Mammal_M	CETACEA	Delphinidae	*Tursiops aduncus*	Indo pacific bottlenose dolphin	DD		DD		Native
Mammal_M	CETACEA	Delphinidae	*Sousa plumbea*	Indian Ocean humpback dolphin	EN	A2cd+3cd+ 4cd	VU	D1	Native
Mammal_M	CETACEA	Phocoenidae	*Neophocaena phocaenoides*	Indo-Pacific Finless porpoise	VU	A2cde+3cde+ 4cde	EN	D	Native
Mammal_M	SIRENIA	Dugongidae	*Dugong dugon*	Dugong	VU	A2bcd+4bcd	VU	B2ab(iii,v)	Native
Mammal_M	SQUAMATA	Elapidae	*Hydrophis lapemoides*	Arabian Gulf Seasnake	LC		DD		Native
Mammal_M	SQUAMATA	Elapidae	*Hydrophis ornatus*	Reef Sea snake	LC		DD		Native
Mammal_M	SQUAMATA	Elapidae	*Hydrophis platurus*	Yellow bellied Seasnake	LC		DD		Native
Mammal_M	TESTUDINES	Cheloniidae	*Chelonia mydas*	Green sea turtle	EN	A2bd	LC		Native
Mammal_M	TESTUDINES	Cheloniidae	*Eretmochelys imbricata*	Hawksbill turtle	CR	A2bd	EN	B2ab(iii)	Native
Birds	ANSERIFORMES	Anatidae	*Anser erythropus*	Lesser White-fronted Goose	VU	A2bcd+3b-cd+4bcd	NE		Native
Birds	ANSERIFORMES	Anatidae	*Alopochen aegyptiaca*	Egyptian Goose	LC		NE		Non-native
Birds	ANSERIFORMES	Anatidae	*Tadorna tadorna*	Common Shelduck	LC		NT°	D1	Native
Birds	ANSERIFORMES	Anatidae	*Mareca strepera*	Gadwall	LC		EN	D	Native
Birds	ANSERIFORMES	Anatidae	*Anas platyrhynchos*	Mallard	LC		NT°	D1	Native
Birds	ANSERIFORMES	Anatidae	*Anas clypeata*	Northern Shoveler	LC		NT°	D1	Native
Birds	ANSERIFORMES	Anatidae	*Anas acuta*	Northern Pintail	LC		VU°	D1	Native
Birds	ANSERIFORMES	Anatidae	*Spatula querquedula*	Garganey	LC		VU°	D	Native
Birds	ANSERIFORMES	Anatidae	*Anas crecca*	Eurasian Teal	LC		NT	B2b(iii)	Native
Birds	ANSERIFORMES	Anatidae	*Marmaronetta angustirostris*	Marbled Duck	VU	A2cd+3cd+ 4cd	NE		Native
Birds	ANSERIFORMES	Anatidae	*Netta rufina*	Red-crested Pochard	LC		NE		Native
Birds	ANSERIFORMES	Anatidae	*Aythya ferina*	Common Pochard	Vu	A2ab+3b+4ab	NT°	D1	Native
Birds	ANSERIFORMES	Anatidae	*Aythya nyroca*	Ferruginous Duck	NT	A2cd+3cd+ 4cd	VU	D1	Native
Birds	ANSERIFORMES	Anatidae	*Aythya fuligula*	Tufted Duck	LC		EN°	D	Native
Birds	GALLIFORMES	Phasianidae	*Alectoris chukar*	Chukar	LC		NE		Non-native
Birds	GALLIFORMES	Phasianidae	*Ammoperdix heyi*	Sand Partridge	LC		VU°	D	Native
Birds	GALLIFORMES	Phasianidae	*Francolinus pondicerianus*	Grey Francolin	LC		LC		Non-native
Birds	GALLIFORMES	Phasianidae	*Coturnix coturnix*	Common Quail	LC		NE		Native
Birds	PODICIPEDIFORMES	Podicipedidae	*Tachybaptus ruficollis*	Little Grebe	LC		VU	D1	Native
Birds	PODICIPEDIFORMES	Podicipedidae	*Podiceps nigricollis*	Black-necked Grebe	LC		VU°	D	Native
Birds	PHOENICOPTERI-FORMES	Phoenicopteri-dae	*Phoenicopterus roseus*	Greater Flamingo	LC		LC		Native
Birds	PHOENICOPTERI-FORMES	Phoenicopteri-dae	*Phoeniconaias minor*	Lesser Flamingo	NT	A2c+3c+4c	NE		Native
Birds	PHAETHONTI-FORMES	Phaethontidae	*Phaethon aethereus*	Red-billed Tropicbird	LC		EN	D	Native
Birds	PELECANIFORMES	Threskiornith-idae	*Plegadis falcinellus*	Glossy Ibis	LC		VU°	D	Native
Birds	PELECANIFORMES	Threskiornith-idae	*Platalea leucorodia*	Eurasian Spoonbill	LC		EN	D	Native
Birds	PELECANIFORMES	Ardeidae	*Nycticorax nycticorax*	Black-crowned Night Heron	LC		VU°	D1	Native

Taxa	Order	Family	Scientific Name	Common English Name	IUCN Threat Category	IUCN Threat Criteria	Local IUCN Red List Category	Local IUCN Red List Criteria	Native/ Non Native/ Introduced/ Domesticated
Birds	PELECANIFORMES	Ardeidae	*Butorides striata*	Green-backed Heron	LC		VU	D1	Native
Birds	PELECANIFORMES	Ardeidae	*Bubulcus ibis*	Western Cattle Egret	LC		LC		Non-native
Birds	PELECANIFORMES	Ardeidae	*Ardea cinerea*	Grey Heron	LC		NE		Native
Birds	PELECANIFORMES	Plecanidae	*Pelecanus crispus*	Dalmatian Pelican	NT	A3cde	NE		Native
Birds	SULIFORMES	Phalcrocoracidae	*Phalacrocorax carbo sinensis/ hanedae*	Great Cormorant (Eurasian)	LC		NT°	D1	Native
Birds	SULIFORMES	Phalcrocoracidae	*Phalacrocorax nigrogularis*	Socotra Cormorant	VU	A2bce+3ce+ 4bce;B2ab (i,ii,iii,iv,v)	EN	B2ab(iii)c(i,ii,iii,iv)	Native
Birds	ACCIPITRIFORMES	Pandionidae	*Pandion haliaetus*	Western Osprey	LC		EN	D	Native
Birds	ACCIPITRIFORMES	Accipitridae	*Neophron percnopterus*	Egyptian Vulture	EN	A2bcde+ 3bcde	CR	C1+2a(i,ii); D	Native
Birds	ACCIPITRIFORMES	Accipitridae	*Torgos tracheliotos*	Lappet-faced Vulture	EN	A2bcd+3bcd	CR	D	Native
Birds	ACCIPITRIFORMES	Accipitridae	*Clanga clanga*	Greater Spotted Eagle	VU	C2a(ii)	CR	D	Native
Birds	ACCIPITRIFORMES	Accipitridae	*Aquila heliaca*	Eastern Imperial Eagle	VU	C2a(ii)	NE		Native
Birds	ACCIPITRIFORMES	Accipitridae	*Aquila fasciata*	Bonelli's Eagle	LC		EN°	D	Native
Birds	ACCIPITRIFORMES	Accipitridae	*Circus aeruginosus*	Western Marsh Harrier	LC		VU°	D	Native
Birds	ACCIPITRIFORMES	Accipitridae	*Circus macrourus*	Pallid Harrier	NT	A2cde+3cde+ 4cde	VU°	D	Native
Birds	ACCIPITRIFORMES	Accipitridae	*Haliaeetus leucoryphus*	Pallas's Fish Eagle	EN	C2a(ii)	NE		Native
Birds	OTIDIFORMES	Otidae	*Chlamydotis macqueenii*	Asian Houbara	VU	A4acd	EN	D	Native
Birds	GRUIFORMES	Rallidae	*Rallus aquaticus*	Water-rail	LC		EN°	D	Native
Birds	CHARADRIIFORMES	Burhinidae	*Esacus recurvirostris*	Great Stone-curlew	NT	A3cd	NE		Native
Birds	CHARADRIIFORMES	Charadriidae	*Vanellus gregarius*	Sociable Lapwing	CR	A3bcd+4bcd	CR	D	Native
Birds	CHARADRIIFORMES	Scolopacidae	*Gallinago media*	Great Snipe	NT	A2cd+3cd+ 4cd	NE		Native
Birds	CHARADRIIFORMES	Scolopacidae	*Limosa limosa*	Black-tailed Godwit	NT	A2bcde+3b-cde+ 4bcde	VU	D1	Native
Birds	CHARADRIIFORMES	Scolopacidae	*Limosa lapponica*	Bar-tailed Godwit	NT	A2abc+3bc+ 4abc	NT	B2b(iii)	Native
Birds	CHARADRIIFORMES	Scolopacidae	*Numenius arquata*	Eurasian Curlew	NT	A2bcd+3bcd+ 4bcd	NT°	D1	Native
Birds	CHARADRIIFORMES	Scolopacidae	*Calidris tenuirostris*	Great Knot	VU	A2bc+3b-c+4bc	CR	D	Native
Birds	CHARADRIIFORMES	Scolopacidae	*Tryngites subruficollis*	Buff-breasted Sandpiper	NT	C2a(i)	NE		Native
Birds	CHARADRIIFORMES	Glareolidae	*Cursorius cursor*	Cream-coloured Courser	LC		CR	C2a(i); D	Native
Birds	CHARADRIIFORMES	Glareolidae	*Glareola nordmanni*	Black-winged Pratincole	NT	A2bc+3b-c+4bc	NE		Native
Birds	CHARADRIIFORMES	Laridae	*Ichthyaetus leucopthalmus*	White-eyed Gull	LC		NE		Native
Birds	CHARADRIIFORMES	Laridae	*Ichthyaetus hemprichii*	Sooty Gull	LC		NT	B1B2(a)	Native
Birds	CHARADRIIFORMES	Laridae	*Thalasseus bergii*	Swift Tern	LC		NT°	D1	Native
Birds	CHARADRIIFORMES	Laridae	*Thalasseus bengalensis*	Lesser Crested Tern	LC		LC		Native
Birds	CHARADRIIFORMES	Laridae	*Sternula saundersi*	Saunders's Tern	LC		CR	D	Native
Birds	CHARADRIIFORMES	Laridae	*Sterna repressa*	White-cheeked Tern	LC		NE		Native
Birds	STRIGIFORMES	Tytonidae	*Tyto alba*	Barn Owl	LC		CR	D	Native
Birds	STRIGIFORMES	Strigidae	*Bubo ascalaphus*	Pharaoh Eagle-Owl	LC		CR	C2a(i); D	Native
Birds	FALCONIFORMES	Falconidae	*Falco vespertinus*	Red-footed Falcon	NT	A2bc+3b-c+4bc	NE		Native
Birds	FALCONIFORMES	Falconidae	*Falco concolor*	Sooty Falcon	VU	C2a(ii)	CR	A2cde; C2a(i); D	Native
Birds	FALCONIFORMES	Falconidae	*Falco cherrug*	Saker Falcon	EN	A2b-cde+3cde+ 4bcde	NE		Native
Birds	PSITTACIFORMES	Psittacidae	*Psittacula eupatria*	Alexandrine Parakeet	NT	A2cd+3cd+ 4cd	NE		Non-native
Birds	PASSERIFORMES	Sylvidae	*Acrocephalus griseldis*	Basra Reed Warbler	EN	A3c	NE		Native
Birds	PASSERIFORMES	Muscicapidae	*Ficedula semitorquata*	Semi-collared Flycatcher	LC		NE		Native
Birds	PASSERIFORMES	Emberizidae	*Emberiza cineracea*	Cinereous Bunting (Eastern)	NT	C1	EN°	D	Native
Birds	CHARADRIIFORMES	Recurvirostridae	*Himantopus himantopus*	Black-winged Stilt	LC		NT		Native
Birds	CHARADRIIFORMES	Dromadidae	*Dromas ardeola*	Crab Plover	LC		VU	B1ab(iii)	Native
Birds	CHARADRIIFORMES	Laridae	*Onychoprion anaethetus*	Bridled Tern	LC		LC		Native
Reptiles	ANURA	Bufonidae	*Duttaphrynus arabicus*	Arabian toad	LC		LC	NA	Native
Reptiles	ANURA	Bufonidae	*Duttaphrynus dhufarensis*	Dhofar toad	LC		LC	NA	Native
Reptiles	SQUAMATA	Agamidae	*Trapelus flavimaculatus*	Yellow-spotted agama	LC		LC	NA	Native
Reptiles	SQUAMATA	Agamidae	*Pseudotrapelus sinaitus*	Sinai agama	NE		NE	NA	Native
Reptiles	SQUAMATA	Agamidae	*Phrynocephalus arabicus*	Arabian toad-headed agama	LC		LC	NA	Native

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Reptiles	SQUAMATA	Agamidae	*Phrynocephalus maculatus*	Spotted toad-headed agama	NE		NE	NA	Native
Reptiles	SQUAMATA	Agamidae	*Uromastyx aegyptia*	Egyptian Spiny-tailed lizard	VU	A2abcd+4ab-cd	VU	A2cd	Native
Reptiles	SQUAMATA	Gekkonidae	*Bunopus spatalurus hajarensis*	Banded rock gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Bunopus tuberculatus*	Arabian ground gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Cyrtopodion scabrum*	Rough-tailed bowfoot gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Hemidactylus flaviviridis*	Yellow-bellied house gecko	NE		NE	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Hemidactylus persicus*	Persian gecko	NE		NE	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Hemidactylus robustus*	Red Sea gecko	NE		NE	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Pristurus carteri*	Carter's semaphore gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Pristurus minimus*	Least semaphore gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Pristurus rupestris*	Rock semaphore gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Ptyodactylus hasselquistii*	Fan-footed gecko	NE		NE	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Stenodactylus arabicus*	Arabian sand gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Stenodactylus doriae*	Dune sand gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Pseudoceramodactylus khobarensis*	Gulf sand gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Stenodactylus leptocosymbotes*	Eastern sand gecko	NE		NE	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Stenodactylus slevini*	Slevin's sand gecko	LC		LC	NA	Native
Reptiles	SQUAMATA	Gekkonidae	*Teratoscincus keyserlingii*	Wonder gecko	NE		CR	A3cd	Native
Reptiles	SQUAMATA	Lacertidae	*Acanthodactylus gongrorhynchatus*	Saudi Fringe-toed sand lizard	DD		DD	NA	Native
Reptiles	SQUAMATA	Lacertidae	*Acanthodactylus haasi*	Haas's spiny-footed lizard	LC		LC	NA	Native
Reptiles	SQUAMATA	Lacertidae	*Acanthodactylus opheodurus*	Snake-tailed fringe-toed lizard	LC		LC	NA	Native
Reptiles	SQUAMATA	Lacertidae	*Acanthodactylus schmidti*	Schmidt's fringe-toed lizard	LC		LC	NA	Native
Reptiles	SQUAMATA	Lacertidae	*Mesalina adramitana*	Hadramaut sand lizard	LC		LC	NA	Native
Reptiles	SQUAMATA	Lacertidae	*Mesalina brevirostris*	Short-nosed sand lizard	LC		LC	NA	Native
Reptiles	SQUAMATA	Scincidae	*Ablepharus pannonicus*	Asian snake-eyed skink	NE		NE	NA	Native
Reptiles	SQUAMATA	Scincidae	*Chalcides ocellatus ocellatus*	Ocellated skink	NE		NE	NA	Native
Reptiles	SQUAMATA	Scincidae	*Mabuya tessellata*	Tessellated mabuya	NE		NE	NA	Native
Reptiles	SQUAMATA	Scincidae	*Scincus mitranus*	Sand skink	LC		LC	NA	Native
Reptiles	SQUAMATA	Scincidae	*Scincus scincus conirostris*	Iranian Sand skink	NE		NE	NA	Native
Reptiles	SQUAMATA	Scincidae	*Trachylepis septemtaeniata*	Golden grass mabuya	NE		NE	NA	Native
Reptiles	SQUAMATA	Varanidae	*Varanus griseus*	Desert Monitor	NE		NE	NA	Native
Reptiles	SQUAMATA	Trogonophidae	*Diplometon zarudnyi*	Zarudny's worm lizard	LC		LC	NA	Native
Reptiles	SQUAMATA	Leptotyphlop-idae	*Leptotyphlops macrorhynchus macrorhynchus*	Hook-nosed thread snake	NE		NE	NA	Native
Reptiles	SQUAMATA	Boidae	*Eryx jayakari*	Jayakar's sand boa	LC		LC	NA	Native
Reptiles	SQUAMATA	Colubridae	*Platyceps ventromaculatus*	Gray's racer snake	NE		NE	NA	Native
Reptiles	SQUAMATA	Colubridae	*Platyceps rhodorachis*	Wadi racer	NE		NE	NA	Native
Reptiles	SQUAMATA	Colubridae	*Lytorhynchus diadema*	Crowned leaf-nosed snake	LC		LC	NA	Native
Reptiles	SQUAMATA	Colubridae	*Malpolon moilensis*	Hooded malpolon	NE		NE	NA	Native
Reptiles	SQUAMATA	Colubridae	*Psammophis schokari*	Schokari sand racer	NE		NE	NA	Native
Reptiles	SQUAMATA	Colubridae	*Spalerosophis diadema cliffordi*	Clifford's diadem snake	NE		NE	NA	Native
Reptiles	SQUAMATA	Viperidae	*Cerastes gasperettii*	Arabian horned viper	LC		LC	NA	Native
Reptiles	SQUAMATA	Viperidae	*Pseudocerastespersicus persicus*	Persian horned viper	LC		LC	NA	Native
Reptiles	SQUAMATA	Viperidae	*Echis carinatus sochureki*	Sindh saw-scaled viper	NE		NE	NA	Native
Invertebrates	ODONATA	Aeshnidae (Hawker Drag-onflies)	*Anax ephippiger*	Vagrant Emperor	LC		LC		Native
Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Androctonus crassicauda*	Arabian Black Fat-tailed Scorpion	NE		VU	D1	Native
Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Apistobuthus pterygocercus*	Saudi Arabian Fat tailed Scorpion	NE		NT		Native
Invertebrates	MANTODEA	Empusidae (Lap-pet Mantis)	*Blepharopsis mendica nuda*	Devil's Flower Mantis	NE		DD		Native
Invertebrates	NEUROPTERA	Ascalaphidae (Owl flies)	*Bubopsis hamata*	Yellow Fleck	NE		DD		Native
Invertebrates	COLEOPTERA	Carabidae (Ground Beetles)	*Cicindela (Calomera) aulica aulica*	Ground Beetle	NE		LC		Native
Invertebrates	ODONATA	Libellulidae (Darter Dragon-flies)	*Crocothemis erythraea*	Carmine Darter	LC		LC		Native
Invertebrates	SOLIFUGAE	Galeodidae (Wind Scorpi-ons)	*Galeodes arabs*	Camel Spider	NE		EN	D	Native

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Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Hottentotta jayakari*	Iranian Black-tailed alligator black scorpion	NE		LC		Native
Invertebrates	MANTODEA	Empusidae (Lappet Mantis)	*Hypsicorypha gracillis*	Helmeted Mantis	NE		DD		Native
Invertebrates	NEUROPTERA	Chrysopidae (Green Lacewings)	*Italochrysa bimaculata*	Green Lace wing	NE		DD		Native
Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Orthochirus innesi*	Egyptian Pillared Tail scorpion	NE		NT	B1ab(iii)	Native
Invertebrates	NEUROPTERA	Myrmeleontidae (Antlions)	*Palpares dispar*	Ant-lion	NE		DD		Native
Invertebrates	ODONATA	Libellulidae (Darter Dragonflies)	*Pantala flavescens*	Globe Skimmer	NE		LC		Native
Invertebrates	LEPIDOPTERA (MOTHS & BUTTERFLIES)	Papilionidae	*Papilio machaon*	Common Swallow tailed butterfly	NE		VU	B1ab(iii,v)	Native
Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Parabuthus liosoma*	African Black Tailed Scorpion	NE		DD		Native
Invertebrates	ODONATA	Gomphidae (Wide-eyed Dragonflies)	*Paragombus genei*	Common Hooktail	NE		DD		Native
Invertebrates	COLEOPTERA	Tenebrionidae (Darkling Beetles)	*Pimelia arabica arabica*	Arabian Darkling Beetle	NE		LC		Native
Invertebrates	CHILOPODA	Scolopendridae (Bark Centipedes)	*Scolopendra mirabilis*	Centipede	NE		LC		Native
Invertebrates	NEUROPTERA	Myrmeleontidae (Antlions)	*Tomatorella hoelzeli*	Ant-lion	NE		DD		Native
Invertebrates	ORTHOPTERA	Acrididae (Grasshoppers & Locusts)	*Truxalis fitzgeraldi*	Giant green Slant face	NE		DD		Native
Invertebrates	SCORPIONS	Buthidae (Fat-tailed Scorpions)	*Vachoniolus globimanus*	Yellow Desert Scorpion	NE		CR	D	Native
Invertebrates	COLEOPTERA	Carabidae (Ground Beetles)	*Anthia (Thermophilum) duodecimguttata*	Domino Beetle	NE		LC		Native
Invertebrates	HYMENOPTERA	Apidae (Bees)	*Anthophora (Paramegilla) semirufa*	Yellow Flower Bee	NE		DD	DD	Native
Invertebrates	COLEOPTERA	Buprestidae (Jewel Beetles)	*Julodis euphratica euphratica*	Sulphurous Jewel Beetle	NE		LC		Native
Plants	MALVALES	Malvaceae	*Abutilon fruticosum*	Texas indian mallow	NE		DD		Native
Plants	FABALES	Fabaceae	*Vachellia flava*	Acacia	LC		EN	D	Native
Plants	FABALES	Fabaceae	*Vachellia tortilis*	Umbrella Thorn Acacia	NE		EN	B2ab(iii)	Native
Plants	MALPIGHIALES	Malphigiaceae	*Acridocarpus orientalis*	Oriental Cherry	NE		CR	B1ab(iii,v)	Native
Plants	POLYPODIALES	Pteridaceae	*Adiantum capillus-veneris*	Maiden Hairfern	LC		CR	B1ab(i,ii, iii,v)	Native
Plants	POALES	Poaceae	*Aeluropus lagopoides*	Aeluropus	NE		LC		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Aerva javanica*		NE		LC		Native
Plants	CARYOPHYLLALES	Aizoaceae	*Aizoon canariense*	Purslane -leaved aizoon	NE		NT		Native
Plants	BRASSICALES	Brassicaceae	*Anastatica hierochuntica*	Rose of jericho	NE		NT		Native
Plants	ASTERALES	Asteraceae	*Anvillea garcinii*		NE		NT		Native
Plants	BORAGINALES	Boraginaceae	*Arnebia hispidissima*	Arabian primrose	NE		LC		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Arthrocaulon macrostachyum*		NE		LC		Native
Plants	ASTERALES	Asteraceae	*Asteriscus hierochunticus*		NE		DD		Native
Plants	LAMIALES	Acanthaceae	*Blepharis ciliaris*	Eyelash plant	NE		NT		Native
Plants	CARYOPHYLLALES	Polygonaceae	*Calligonum comosum*		NE		NT		Native
Plants	CARYOPHYLLALES	Polygonaceae	*Calligonum crinitum*		NE		NT		Native
Plants	GENTIANALES	Apocynaceae	*Calotropis procera*	Sodom's apple	NE		LC		Native
Plants	BRASSICALES	Capparaceae	*Capparis cartilaginea*	Caper plant	NE		DD		Native
Plants	BRASSICALES	Capparaceae	*Capparis spinosa*	Common caper bush	NE		LC		Native
Plants	GENTIANALES	Apocynaceae	*Desmidorchis arabica*	Caralluma	NE		CR	B2ab(iii); C2a(i)	Native
Plants	POALES	Poaceae	*Cenchrus ciliaris*	Foxtail grass	LC		LC		Native
Plants	LAMIALES	Orobanchaceae	*Cistanche tubulosa*	Desert hyacinth	NE		LC		Native
Plants	CUCURBITALES	Cucurbitaceae	*Citrullus colocynthis*	Desert squash	NE		LC		Native
Plants	RANUNCULALES	Menispermeaceae	*Cocculus pendulus*		NE		DD		Native
Plants	CARYOPHYLLALES	Caryophyllaceae	*Cometes surratensis*		NE		NT		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Cornulaca monacantha*		NE		LC		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Cornulaca aucheri*		NE		LC		Native
Plants	FABALES	Fabaceae	*Crotalaria aegyptiaca*		NE		NT		Native
Plants	SOLANALES	Convolvulaceae	*Cuscuta planiflora*		NE		LC		Native
Plants	SAXIFRAGALES	Cynomoriaceae	*Cynomorium coccineum*	Redthumb	NE		LC		Native

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Plants	POALES	Cyperaceae	*Cyperus conglomeratus*	Cyperus	NE		LC		Native
Plants	CARYOPHYLLALES	Caryophyllaceae	*Dianthus cyri*	Wild carnation	NE		DD		Native
Plants	ASPARAGALES	Asparagaceae	*Dipcadi biflorum*	Dipcadi lily	NE		CR	C2a(i); D	Native
Plants	ASPARAGALES	Asparagaceae	*Dipcadi erythraeum*	Brown lily	NE		NT		Native
Plants	BRASSICALES	Capparaceae	*Dipterygium glaucum*		NE		LC		Native
Plants	SAPINDALES	Sapindaceae	*Dodonaea viscosa*	Dodonaea	NE		LC		Native
Plants	APIALES	Apiaceae	*Ducrosia anethifolia*		NE		DD		Native
Plants	EPHEDRALES	Ephedraceae	*Ephedra foliata*	Shrubby horse tail	NE		NT		Native
Plants	ASPARAGALES	Orchidaceae	*Epipactis veratrifolia*	Eastern Marsh Helleborine	LC		CR	B1ab(iii)+2ab(iii)	Native
Plants	MALPIGHIALES	Euphorbiaceae	*Euphorbia larica*		NE		NT		Native
Plants	BRASSICALES	Brassicaceae	*Farsetia aegyptia*		NE		LC		Native
Plants	ROSALES	Moraceae	*Ficus johannis subsp. johannis*	Mountain fig	NE		CR	B1ab(iii)+2ab(iii);D	Native
Plants	ROSALES	Urticaceae	*Forsskaolea tenacissima*	Velcro plant	NE		LC		Native
Plants	GENTIANALES	Apocynaceae	*Glossonema varians*		NE		DD		Native
Plants	MALVALES	Malvaceae	*Grewia erythraea*	Grewia	NE		EN	B1ab(iii)+ 2ab(iii)	Native
Plants	CARYOPHYLLALES	Caryophyllaceae	*Gymnocarpos decandrus*		NE		NT		Native
Plants	CARYOPHYLLALES	Caryophyllaceae	*Gymnocarpos sclerocephalus*	Knucklehead weed	NE		NT		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Halocnemum cruciatum*		NE		LC		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Halopeplis perfoliata*	String of beads	NE		LC		Native
Plants	POALES	Poaceae	*Halopyrum mucronatum*		NE		DD		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Halothamnus bottae*		NE		NT		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Haloxylon persicum*	White saxaul	NE		EN	B1ab(i,ii,iii)	Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Haloxylon salicornicum*	Jointed glasswort	NE		LC		Native
Plants	SAPINDALES	Rutaceae	*Haplophyllum tuberculatum*		NE		LC		Native
Plants	MALVALES	Cistaceae	*Helianthemum kahiricum*	Rock rose	NE		DD		Native
Plants	MALVALES	Cistaceae	*Helianthemum lippii*		NE		LC		Native
Plants	CARYOPHYLLALES	Aizoaceae	*Mesembryanthemum nodiflorum*	Egyptian fig marigold	NE		VU	B1ab(iii)	Native
Plants	ARECALES	Arecaceae	*Nannorrhops ritchieana*	Dwarf palm	NE		CR	D	Native
Plants	MALVALES	Neuradaceae	*Neurada procumbens*	Creeping thorn rose	NE		LC		Native
Plants	POALES	Poaceae	*Phragmites australis*	Common reed	LC		LC		Native
Plants	FABALES	Fabaceae	*Prosopis cineraria*	Prosopis	NE		EN	D	Native
Plants	LAMIALES	Plantaginaceae	*Schweinfurthia imbricata*	Schweinfurthia	NE		CR	B1ab(iii)+2ab(iii)	Native
Plants	CARYOPHYLLALES	Aizoaceae	*Sesuvium verrucosum*	Sesuvium	NE		LC		Native
Plants	CARYOPHYLLALES	Caryophyllaceae	*Silene villosa*	Desert campion	NE		LC		Native
Plants	POALES	Poaceae	*Stipagrostis ciliata*	Tall bushman-grass	NE		LC		Native
Plants	ZYGOPHYLLALES	Zygophyllaceae	*Zygophyllum qatarense*	Bean caper	NE		LC		Native
Plants	ZYGOPHYLLALES	Zygophyllaceae	*Zygophyllum simplex*		NE		LC		Native
Plants	ZYGOPHYLLALES	Zygophyllaceae	*Tetraena mandavillei*		NE		LC		Native
Plants	BRASSICALES	Moringaceae	*Moringa peregrina*	Wild drumstick tree	NE		VU	D	Native
Plants	LAMIALES	Lamiaceae	*Teucrium stocksianum*	Teucrium	NE		EN	B1ab(iii)+2ab(iii)	Native
Plants	POALES	Poaceae	*Typha domingensis*	Southern cat-tail	LC		EN	D	Native
Plants	SOLANALES	Solanaceae	*Withania somnifera*		NE		LC		Native
Plants	ROSALES	Rhamnaceae	*Ziziphus spina-christi*	Christ's thorn	NE		LC		Native
Plants	MALVALES	Malvaceae	*Hibiscus micranthus*		NE		NT		Native
Plants	LAMIALES	Lamiaceae	*Lavandula subnuda*		NE		DD		Native
Plants	GENTIANALES	Apocynaceae	*Leptadenia pyrotechnica*	Broom bush	NE		LC		Native
Plants	LAMIALES	Lamiaceae	*Leucas inflata*		NE		LC		Native
Plants	CARYOPHYLLALES	Plumbaginaceae	*Limonium axillare*	Sea laveander	NE		EN	B2b(iii)	Native
Plants	SOLANALES	Solanaceae	*Lycium shawii*	Desert thorn	NE		EN	B1b(iii)+2b(iii)	Native
Plants	MALVALES	Malvaceae	*Malva parviflora*	Least mallow	NE		LC		Native
Plants	BRASSICALES	Brassicaceae	*Notoceras bicorne*		NE		DD		Native
Plants	BRASSICALES	Resedaceae	*Ochradenus arabicus*	Ochradenus	NE		VU	B1ab(iii)	Native
Plants	POALES	Poaceae	*Panicum turgidum*	Turgid panic grass	NE		NT		Native

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Plants	POALES	Poaceae	*Pennisetum divisum*	Bristle grass	NE		LC		Native
Plants	POALES	Poaceae	*Pennisetum setaceum*	Fountain grass	NE		LC		Native
Plants	GENTIANALES	Apocynaceae	*Pentatropis nivalis*		NE		DD		Native
Plants	GENTIANALES	Apocynaceae	*Pergularia tomentosa*		NE		LC		Native
Plants	GENTIANALES	Apocynaceae	*Periploca aphylla*	Periploca	NE		EN	D	Native
Plants	FABALES	Polygalaceae	*Polygala erioptera*	Polygala	NE		EN	D	Native
Plants	ASTERALES	Asteraceae	*Pulicaria edmondsonii*		NE		LC		Native
Plants	ASTERALES	Asteraceae	*Rhanterium epapposum*	Rhanterium	NE		VU	B1ab(iii)	Native
Plants	GENTIANALES	Apocynaceae	*Rhazya stricta*		NE		LC		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Salsola drummondii*		NE		LC		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Caroxylon imbricatum*	Foetid saltwort	NE		LC		Native
Plants	CARYOPHYLLALES	Amaranthaceae	*Kaviria rubescens*		NE		LC		Native
Plants	LAMIALES	Lamiaceae	*Salvia aegyptiaca*	Egyptian sage	NE		NT		Native
Plants	LAMIALES	Lamiaceae	*Salvia spinosa*		NE		NT		Native
Plants	FABALES	Fabaceae	*Senna italica*	Senna	NE		LC		Native
Plants	FABALES	Fabaceae	*Tephrosia apollinea*		NE		LC		Native
Plants	FABALES	Fabaceae	*Tephrosia nubica*		NE		NT		Native
Plants	BRASSICALES	Brassicaceae	*Zilla spinosa*		NE		DD		Native

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