



الإمارات العربية المتحدة
وزارة البيئة والمياه

Ministry of Environment & Water

Wildlife & Marine Conservation Efforts in the United Arab Emirates

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**Biome Protection &
Conservation
Measures In UAE**

1. Biome protection and Conservation measures in UAE

There is a considerable support for the environment and wildlife conservation among the UAE rulers, in spite of that, the basic set-up in-situ conservation is still needs more efforts, at the country level. There are several privately areas in country; however a network of protected areas system, comprising natural areas with free ranging species has yet to be fully established

Protected areas

One of the key aspects of any conservation planning to address core issues for on-site protection of species and sites. Setting up a network of protected area is a fundamental requirement for protecting important species assemblages, conservation of flagship species and important and unique habitats. The total number of protected areas in UAE is exceed 60, meanwhile the officially been declared are only 20 estimating 6% of the country's area, as they are shown in table (1).

Through the Ministry of Environment and water strategy 2011-2013 (Enhancing environmental security), the initiative of improving the protection level of the fragile habitats is included the following activities:-

1. Updating the National strategy for the protected areas by the end of 2012.
2. Establishment of the National biodiversity strategy by the end of 2013.
3. Carrying out flora and fauna surveying for fragile habitats representing 4 % of the country area, as a step toward realizing the following targets:-
 - a. Protection of the fragile habitats to meet the EPI critical habitats protection indicator.

- b. Raise up the percentage of officially declared protected areas to 10 % of the country area as CBD and the EPI Biome protection requirements.
 - c. Consequently, improve the country EPI level.
4. One of the most important activities of the Ministry is to carry out the guidelines for establishment and the integrated management of the protected areas in the country as to meet the IUCN categorization and other relative organization's requirements.
5. Guidelines for captive breeding Centers establishment for endangered species, is one of the Ministry of Environment and Water activities.

Table (1): officially declared protected areas in UAE (20 in number)

No.	Name of PA	Emirate	Area (km ²)	Type	Year
1.	Marawah Marine PA	Abu Dhabi	4255	Marine	2001
2.	Al Yasat PA	Abu Dhabi	482	Marine	2005
3.	Ras Al Khor PA	Dubai	6.2	Marine	1998
4.	Jabal Ali PA	Dubai	76.86	Marine	1998
5.	Dubai Desert PA	Dubai	22.9	Terrestrial	2001
6.	Khour Kalbaa PA	Sharjah	6	Terrestrial	1994
7.	Al Gheil PA	Sharjah	1.1	Terrestrial	2007
8.	Wadi Al-Helw PA	Sharjah	3	Terrestrial	2007
9.	Al-Berdy PA	Sharjah	18.5	Terrestrial	2007
10.	Al-Ramthaa PA	Sharjah	1.5	Terrestrial	2007
11.	Al-zolaimaa PA	Sharjah	0.96	Terrestrial	2007
12.	Sir Bu Nuer PA	Sharjah	12	Marine	2000
13.	Al-madina PA	Sharjah	16	Terrestrial	1996
14.	Jabal Al-Fayah PA	Sharjah	2.5	Terrestrial	2007
15.	Al Zawraa (Khour Ajman) PA	Ajman	1.4	Terrestrial	2004
16.	Bird island PA	Fujairah	1.36	Marine	1995
17.	Al-badia PA	Fujairah	0.57	Marine	1995
18.	Al Aqah PA	Fujairah	0.71	Marine	1995
19.	Dedna PA	Fujairah	0.08	Marine	1995
20.	Wadi Wurayah PA	Fujairah	127	Terrestrial	2009
Total		5036.42 km²	Country Area = 83600 km ²	6.024 %	

Some Examples of the officially declared Protected areas in UAE

Marawah Marine Protected Area

Marawah Marine Protected Area was declared in 2001 with a total area of 4255 km², and is the largest MPA in the region. The island hosts 60 per cent of the population of dugongs in the world.



The protected areas is a good representative example for the gulf region that it contains coastal areas, sabkhas, shallow waters and shallow islands as well as sea grass habitats. Also the protected area contains scattered mangrove patches (*Avicenna marina*) which considered important habitats for many of terrestrial and marine species.

The island has great cultural and archaeological significance with the presence of more than 20 sites dating back to the Stone Age. Houses as old as 7,000 years from Stone Age were unearthed a few years back along with the remains of the oldest inhabitants of the island.

Archaeological sites identified on the island date back to the Bronze Age, Iron Age the late pre Islamic period as well as Islamic period. A large Islamic graveyard, with over 60 burials, and an important fragment of pottery from the Late Stone Age were found.

Biodiversity

Four species of marine turtles, 70 species of fish and coral reefs, and kilometers of mangrove make up the unique environment of Marawah. Resident and migratory bird species, such as ospreys, sooty falcons and several tern species, are also part of the ecosystem, making the area important because of its biodiversity. Bottlenose and humpback dolphins are also found in the surrounding waters. Preserving the natural diversity and quality of coastal and marine environment is what the management of the island aims at. A 12-member Marine ranger force carries out the surveillance and control programme.

Marawah is, however, just one island of the whole protected area that includes 20 islands. It is surrounded by Abu Al Abyad Island in the east, Sir Baniyas in the west, a coastal line in the south and Jarnain Island in the north. EAD has carried out several fishery studies and detailed surveys to facilitate the setting up of a fish stock database that can eventually lead to a better management regime for fisheries. Interestingly, the island inhabits more than 107 families who have lived here for several years. Some families hold the license to fish issued by EAD but many have moved on to the city or are not completely settled here.

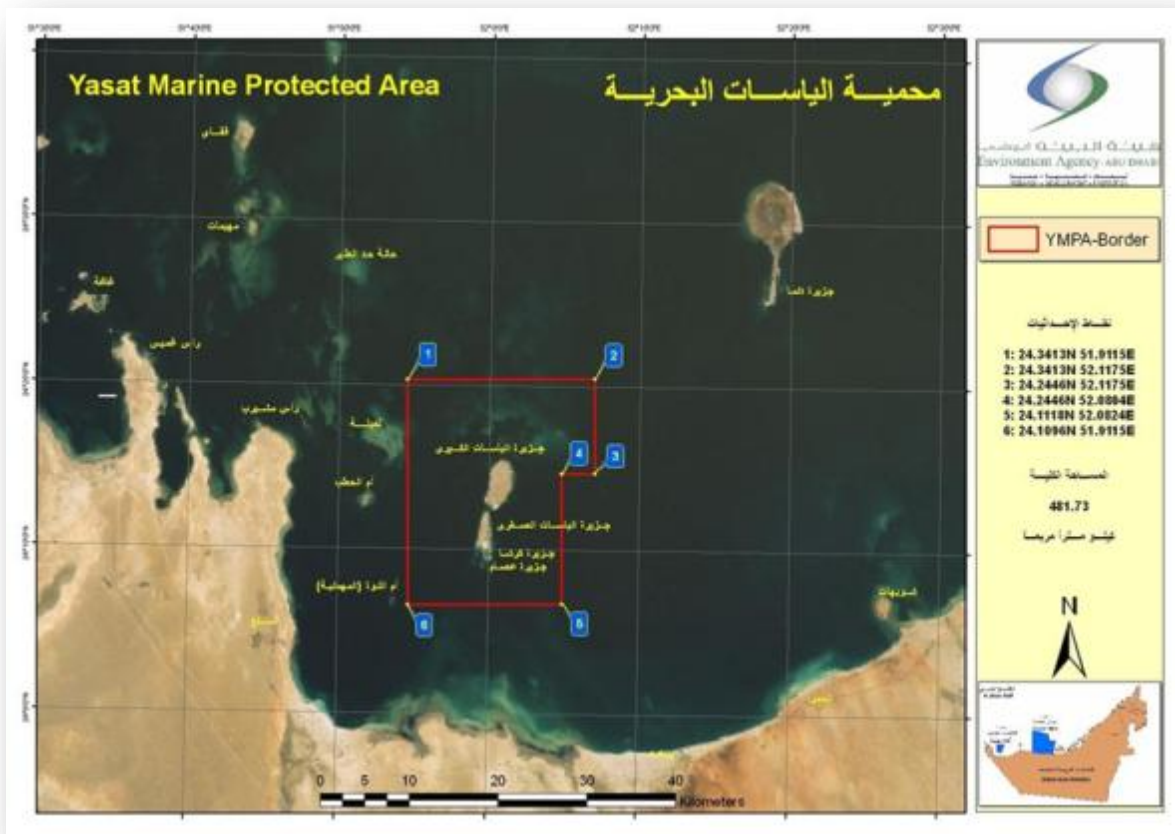
Marawah Becomes a Biosphere Reserve.

Marawah Protected Area was added to UNESCO's Man and Biosphere Program global network of biosphere reserves making it the first declared Marine Biosphere Reserve in the UAE and the region.

Essential infrastructures for MPAs management were procured and maintained. Rehabilitation activities commenced in order to rehabilitate a mangrove site at Marawah Island. An experimental artificial reef project was established at Al Bazm Island to evaluate the suitable artificial structure to replenish fisheries stock and to set guidelines for the artificial reefs in Abu Dhabi.

Al Yasat Marine Protected Area

Al Yasat Marine Protected Area was declared in 2005 to cover a total area of 482 km². The Yasat group consists of four islands in the far west of the UAE. They are Upper Yasat, Lower Yasat, Esam and Karsha. The Al Yasat MPA is expected to provide effective protection for the area’s fish stocks at various stages in their life cycles, when they are dependent on specific habitat types or locations. In the absence of fishing pressure inside the protected area, fish will be able to grow to maturity and increase in abundance.



Ecological Importance of Al Yasat

The Al Yasat group of islands and the surrounding waters included in the new MPA are of considerable ecological importance.

- The islands are surrounded by coral reefs which act as important marine sanctuaries to many species including the already over-exploited Hamour, Shaari and Farsh. The reefs have good coral growth and high coral cover with around 8 coral species present.
- The islands have irregular coastlines with both rocky and sandy shorelines, providing a variety of habitats.
- The MPA has suitable foraging habitats for the critically endangered Hawksbill turtles.
- The MPA also has significant populations of marine fauna including the endangered Green turtle and the Dugong.
- Desert hares are present on the islands, where they make use of the natural landscape and vegetation for shelter, food and breeding.
- Upper Yasat has an important breeding colony of Socotra cormorants, a near-endemic bird species for the UAE, which is one of less than 15 existing colonies in the world.

Cultural and Historical Importance of Al Yasat

According to surveys undertaken in this area , the Yasat islands were once the site of human settlement in the late pre-Islamic period (1st – 6th Century AD). The remains of shelters and other sites, which demonstrate evidence of occupation during the Late Islamic period, have also been found, including shell middens which demonstrate the way in which local inhabitants exploited the food resources present in nearby waters. Several of these sites are considered to be of national or regional importance.

Restrictions of Al Yasat Marine Protected Area

- Any form of hunting, killing or catching wildlife is banned.
- Damaging the nesting areas of birds and marine turtles is banned.
Changing the geographical features of the islands is prohibited.
- Berthing of boats in non-designated areas is banned.
- Fishing is restricted within three nautical miles from the nearest low water mark (shoreline) in the MPA.

Ras Al Khor Wildlife Sanctuary

It is a wetland reserve, Ramsar site, renowned for attracting migratory birds in large numbers. The wetlands have large numbers of birds, crustaceans, small mammals and fish.

Ras Al Khor Wildlife Sanctuary represents an enclave of relative wilderness amidst swirling traffic and sprawling urban infrastructure. Located just as the name in Arabic suggests - at the Cape of the Creek, it is among the few urban protected areas of the world.

The Dubai Municipality has taken great efforts to protect and preserve the biodiversity of this delicate ecosystem. The wetland has been fenced off from the



public and three birding hides have been built. The bird hides are a first step towards development of more elaborate visitor education facilities in the protected area. WWF UAE Project Office collaborated with Dubai Municipality's

Environment Department, in setting up the facilities that were sponsored by the National Bank of Dubai. Opportunities for experiencing a natural environment in this rapidly building-up emirate are so limited that the opening of Ras Al Khor to visitors is a boon to present and potential nature lovers.

Presently there are three birding hides located on the perimeter of the sanctuary open to the public. Ras Al Khor is also home to about 500 Greater Flamingoes (*Phoenicopterus roseus*), which has become something of a mascot for Dubai's Wild Life protection program.

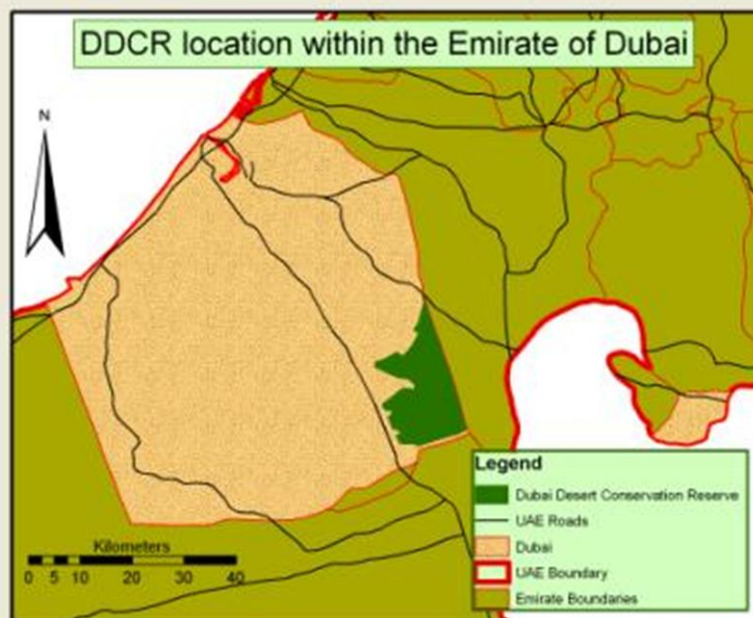
Species

Some of the regular visitors to the sanctuary are: Asian Pied Myna, Black-winged stilt, Blue-cheeked Bee-eater, Caspian Tern, Citrine Wagtail, Common Greenshank, Common Hoopoe, Common Kingfisher, Common Sandpiper, Common Snipe, Curlew, Dunlin, Eurasian Marsh Harrier, Great black backed gull, Great White Egret, Greater Flamingo, Grey Francolin, Grey Heron, Grey Plover, Indian Peafowl, Indian , Roller, Indian Silverbill, Isabelline Shrike, Little Bittern, Little Green Bee-eater, Malabar Lark, Mallard, Osprey, Pied avocet, Purple Sunbird, Red-vented Bulbul, Red-Wattled lapwing, Ringed Plover, Ruddy Turnstone, Sanderling, Snowy Plover, Socotra Cormorant, Spotted Eagle, Terek Sandpiper, Western Reef Heron, White Wagtail, White-eared Bulbul, Yellow billed stork.



Dubai Desert Conservation Reserve (DDCR)

In 2003, the Government of Dubai decided to create a nationally significant conservation area and charged Emirates with its management and protection. Since then Emirates has invested over Dhs10m in support of wildlife conservation programs, scientific research, and protection of this 225 square kilometer area. It is consider as a foremost example of sustainable tourism development, to preserve a balance between conservation and Dubai's rapid urban expansion.



Emirates and Al Maha have contributed enormously to ensure the management of conservation, research and tourism within the DDCR is at the highest international standards."

Since the opening of Al Maha in 1999, the successful re-introduction of the Arabian Oryx, Arabian Gazelle, Sand Gazelle and large-scale indigenous flora re-seeding programs are just some of the major projects that have been delicately carried out in the DDCR. It is the only location within the UAE where visitors are able to experience completely free-roaming wildlife within their natural desert and dune surroundings. The reserve is the most actively researched and carefully managed conservation area in the region.

It is registered with the World Database on Protected Areas (WDPA), audited by UNEP's World Conservation Monitoring Centre, and is a member of the International



Union for Conservation and Nature (IUCN). The DDCR has joined some of the world's most treasured conservation areas, including such reserves as Yellowstone National Park in the USA and the Great Barrier Reef in Australia. Confirmed by scientific research, the environment and habitat within the DDCR has greatly improved from what it was ten years ago. Quite apart from the wildlife which has been reintroduced, many species that had disappeared from the area are now returning on their own accord.

The DDCR is segregated into four utilization zones. In some areas, only researchers are allowed to enter on foot. In another zone a select number of safari operators - who worked closely with the reserve management to create a foremost example of sustainable desert tourism in the region - can conduct safaris

for visitors, providing an experience of the desert and dunes, and its unique fauna and flora, and gaining a better understanding of Dubai's conservation efforts.

Wadi Wurayah, Fujairah

Establishment of Wadi Wurayah Mountain Protect Area, Fujairah On March 16, 2009, Wadi Wurayah in the Emirate of Fujairah, was designated a Protected Area, becoming the first Mountain Protected Area of the United Arab Emirates. This marked the successful conclusion of a project, spanning three years, fully sponsored by HSBC Bank Middle East Limited. The project began in 2006 when Fujairah Municipality and EWS-WWF assessed the value of Wadi Wurayah for nature conservation and for its establishment as the country's first Mountain Protected Area. The Protected Area extends over 129 km² in the northern part of Fujairah emirate between the towns of Khor Fakkan and Bidiyah along the Oman Gulf coastline of Fujairah. In these respects, the Wadi was found to be of great natural, historical and cultural importance, possessing rare and endangered wildlife species, archaeological sites and cultural heritage; a management plan for the proposed Wadi Wurayah Protected Area was prepared, as well as a draft of the legal decree for its designation.

Objectives

The long term aim of the Wadi Wurayah Mountain Protected Area is the realization of a restored, protected and sustainably managed freshwater ecosystem that would: support rich biodiversity; provide environmental services and socio-economic opportunities; serve as a replicable example of sustainable freshwater ecosystem management; and build local government capacity in designing and managing protected areas. The specific objectives are:

- Increase capacity for long-term sustainable management
- Reduce threats to the Wadi Wurayah freshwater ecosystem

- Deliver a successful field project

Rich biodiversity

Throughout the course of the project, there were many exciting findings. Identified were nine different freshwater habitat types with exceptionally good water quality. Hydro-chemical analyses indicate that the spring waters meet all World Health Organization standards for drinking and bottled water! Wadi Wurayah is of considerable ecological significance allowing some of the rarest species found in the UAE, Arabian Peninsula and the world to survive this harsh climate. Over the past three years, we have revealed so far within the erstwhile proposed protected area, the presence of 12 species of mammals (out of a total of 20 observed, or suspected to exist, in the region). Of those recorded, 60% are of international or national concern, including flagship species such as the Arabian Tahr, Mountain Gazelle, Caracal Lynx, Blanford's Fox and, possibly, the Arabian Leopard. The Wadi Wurayah Mountain Protected Area is already known to be one of the world's three remaining strongholds of Arabian Tahr. As it turned out, these were valuable findings; but there was much more to come. Of the 75 species of birds recorded within the Wadi Wurayah region, 5% are considered endangered worldwide by the IUCN and 24 % are of conservation concern for the UAE. Furthermore, the observation of two skink species – Tessellated Mabuya and Ocellated Skink – never before recorded in the area, added two more to the list of 17 wild reptile and amphibian species of which the following five are endemic to the UAE Mountains and northern Oman: Oman Saw-scaled Viper, Blue-tailed Lizard, Bar-tailed Semaphore Gecko, Rock Semaphore Gecko, Banded Ground Gecko. *Garra barreimiae*, the only fish species present in Wadi Wurayah, was observed. A total of 74 terrestrial invertebrate families belonging to 12 different orders were identified, and, if that's not enough, 30 arthropod species have been recorded so far, 14 of which were first discovered and described in the wadi for the first time. Two new insect species have been discovered in the wadi; a tiny, 2

millimeter long aquatic beetle (Coleoptera): *Ochthebius wurayah*, and a wasp specie commonly known as a “velvet ant” (Hymenoptera), approximately 5 millimeters long: *Nanomutilla wurayahensis* More than 300 species of plants have been recorded in the area, including species that are found only in wetlands such as *Typha dominginsis* and the unique orchid species of UAE: *Epipactis veratrifolia*.

Cultural Heritage

While the biodiversity of Wadi Wurayah is exceptional, its cultural value cannot be underestimated. Because of the presence of permanent water, the wadi has been used by local communities since time immemorial.

An EWS-WWF and Fujairah Municipality team surveyed 29 heritage sites ranging from pre- Islamic tombs of a Late Pre-Islamic date (i.e. post 300 BC to ca 500 – 600 AD) to Bedouin settlements from the early 1980s. Artifacts were also identified as being 15th – 18th century AD porcelain and 14th-17th century AD pottery fragments. Wadi Wurayah is, however, not without threats, the main ones being overexploitation of water resources, overgrazing of domestic animals, hunting, habitat degradation (littering, fires), quarrying, habitat fragmentation, urbanization and the introduction of invasive species. Given the biological and cultural wealth and its vulnerability to anthropogenic pressures, protection to Wadi Wurayah could not have been more timely.

Arabia's Wildlife Centre, Sharjah

Not only does the Wildlife Centre house the world's largest collection of Arabian wildlife but it is also the only zoological park in the Middle East to be completely indoors. Making it perfect for a day out, regardless of the weather. The Wildlife Centre has been divided up into various sections, each dedicated to a group of species including reptiles, invertebrates, birds, nocturnal animals, ungulates and large carnivores.

Environment and Protected Areas Authority (EPAA)

The Environment and Protected Areas Authority (EPAA) is the department within the Sharjah Government that the BCEAW and Sharjah Desert Park fall under. In addition to managing the Desert Park the EPAA is also responsible for enforcing the UAE's Federal Environment Law in the Emirate of Sharjah, monitoring and control of pollution, environmental education and management of Protected Areas.

Breeding Centre for Endangered Arabian Wildlife (BCEAW)

The Breeding Centre for Endangered Arabian Wildlife (BCEAW) is a modern conservation, research and captive breeding facility specializing in the unique fauna of the Arabian peninsula. The BCEAW, along with another 3 facilities which comprise the Sharjah Desert Park, is the realization of His Highness Dr. Sheikh Sultan bin Mohammed Al Qassimi's dream to preserve the natural fauna and flora of Sharjah and the United Arab Emirates for future generations. The BCEAW is unfortunately closed to the public but all of the animals which are held here can be seen at Arabia's Wildlife Centre. The Wildlife Centre houses an impressive variety of animals indigenous to the Arabian peninsula and is fully air conditioned, making it perfect for a day out with the family even in summer.

Using the Arabian leopard as its flagship species the BCEAW grew into a facility that not only bred the locally endangered wildlife but also serves as a base for research into all the other species of mammal, reptile, freshwater fish, amphibians and invertebrates which are endemic to the Arabian Peninsula. Over the years the BCEAW has built up strong ties with facilities, institutes, government departments and field researchers, on both a regional and international basis. This cooperation has made it possible for environmental planning and management to be discussed cooperatively, rather than each area of responsibility dealt with on an individual basis. This holistic approach has reaped great benefits for the wildlife and habitats of Arabia, with expertise and resources being shared amongst people with a common goal.

For many species complex surveys in their natural habitat were conducted during and after the construction phase of the BCEAW. As work progressed, species were captured in the wild and in some cases obtained from zoos of neighboring countries, animal markets or from private collections.

The BCEAW breeds close to 200 species ranging from the endangered Arabian Leopard, North African Cheetah, Arabian Tahr, to Arabian freshwater fish, amphibians, reptiles and birds, as shown in the below table. All species are internationally registered and are listed in the relevant stud books. The Centre also hosts a yearly international conference on 'Biodiversity Conservation in the Arabian Peninsula', which was first conceived, organized and financed on behalf of the BCEAW by Animal Management in 1999, and has since then grown beyond its original expectations.

Table (2) Animal collection in BCEAW

Common Name	Species Name	Total number
Insectivores		
Long eared Hedgehog	<i>Hemiechinus auritus</i>	10
Ethiopian Hedgehog	<i>Hemiechinus aethiopicus</i>	6
Brandt's Hedgehog	<i>Hemiechinus hypomelas</i>	1
Chiroptera		
Egyptian Fruit Bat	<i>Rousettus aegyptiacus</i>	60
Primates		
Hamadryas Baboon	<i>Papio hamadryas</i>	7
Carnivora		
Arabian Leopard	<i>Panthera pardus nimr</i>	14
Cheetah	<i>Acinonyx jubatus</i>	22
Arabian Caracal	<i>Caracal caracal</i>	2
Gordon's Wildcat	<i>Felis silvestris gordonii</i>	12
Sand Cat	<i>Felis margarita</i>	2
Arabian Wolf	<i>Canis lupus arabs</i>	12
Common Jackal	<i>Canis aureus aureus</i>	15

Blanford's Fox	<i>Vulpes cana</i>	16
Sand Fox	<i>Vulpes ferrilata</i>	13
Stripped Hyaena	<i>Hyaena hyaena</i>	19
Feline Genet	<i>Genetta genetta</i>	17
White tailed Mongose	<i>Ichneumia albicauda</i>	7
Indian grey Mongoose	<i>Herpestes edwardsii</i>	7
Artiodactyla		
Arabian Oryx	<i>Oryx leucoryx</i>	93
Sand Gazelle	<i>Gazella subgutturosa marica</i>	118
Arabian Tahr	<i>Arabitragus jayakari</i>	5
Nubian Ibex	<i>Capra nubiana</i>	42
Hydracoidea		
Arabian Hyrax	<i>Procavia capensis jayakari</i>	58

Local traditions, culture and bird conservation

Although the United Arab Emirates' history is only recent, birds have been an integral part of Arabian culture. Arabian falconry is deeply rooted in the culture and traditions of Arabian people. Although Arabian falconry has often been viewed as unsustainable activity, it has also been instrumental in establishing environment and wildlife conservation related activity in the country. Concerns for dwindling Houbara numbers led to substantial funding for research and establishment of the National Avian Research center in 1988.

National Avian Research Centre in Sweihan

Established in 1989 after the late president of the UAE HH Sheikh Zayed bin Sultan Al Nahyan himself noticed the declining numbers of Houbara, NARC became operational in 1993 and started breeding attempts with donated birds. The first results of this conservation programme were seen in 2000, when 17 chicks were hatched in captivity and in 2004 the first five captive-bred Houbara were released into the wild. In 2006, the IFHC was established to oversee the research and this year the breeding production is expected to exceed 2,700 Houbara with about 1,000 birds being released into the wild by the end of the year.

The International Fund for Houbara Conservation (IFHC) recently announced the success of their first controlled experiment to release seven captive bred Asian Houbara into the wild in Kazakhstan. The aim behind the release was to find out if the Houbara were able to survive in the wild and migrate. If they were able to migrate, the study could show whether the captive bred Asian Houbara could identify their migration route merely by hereditary instinct or by emulating the behavior of the elder wild Houbara living in the same region.

The group of seven captive bred Kazakh Houbara, included four male birds and three females with the release taking place in the birds' original habitat, Kazakhstan.

Arabian Oryx Conservation Program in Abu Dhabi

The Arabian Oryx, one of the largest desert mammals in the Arab region, has been an important part of the Arabian heritage throughout the history. Also known as wild cows, Arabian Oryx are large antelopes that weigh between 80 to 100 kg and stand nearly 1.5 meters high at the shoulder. Both male and female Arabian Oryx carry long and slightly curved horns with sharp edges which they use to protect themselves against enemies.

Pure white fur covers the body of the animal with black or brown stripes on the legs and face. Its white color, while helping to overcome the heat of the sun, made it extremely visible and easy to be chased and killed by



hunters. Although Arabian Oryx is famous for its stamina, it cannot run very fast.

The unique characteristics of the Arabian Oryx helped it adapt to the harsh climate conditions of the Arabian Peninsula over the centuries. The animal, which feeds on grass and desert plants, is not completely dependent on one type of plant. In dry seasons, it feeds on roots of wild plants as well as succulent plants which contain a lot of water and have high nutritional value. The animal only

needs water equivalent to 2 to 4% of its body weight and can survive on plants and grass without drinking water for a long time.

Historically, the Arabian Oryx was found in two major subgroups that roamed freely in the northern region of the Arabian Peninsula and the Empty Quarter. The distribution of the animal in the UAE was in Western Region areas of Al Dhafra and Liwa up to the Empty Quarter. They lived in large numbers in rocky desert, sand dunes and dry habitats across the Arabian Peninsula until the early 20th century when poaching and destruction of their natural habitat caused their extinction. By the 1960s, the animal scattered into small groups in southern parts of the Arabian Peninsula and became extinct in the wild in 1972.

Early Conservation Efforts by Sheikh Zayed, who took a personal interest in the Arabian Oryx, was one of the first conservationists to notice the decreasing number of Arabian Oryx at an alarming rate. In 1968, he launched a successful conservation program and ordered the capture of the remaining 4 animals in the wild to start a captive breeding program in Al Ain Zoo. After the development of Sir Bani Yas Island, Sheikh Zayed started another captive breeding program with 3 female and 2 male Oryx, and today the Island has a thriving population of Arabian Oryx.

Thanks to the huge success of Sheikh Zayed's conservation and captive breeding efforts, the UAE is home to the largest population of Arabian Oryx in the world with more than 4500 heads of Arabian Oryx, of which 3500 to 3700 live in natural reserves and private farms of Abu Dhabi in Sir Bani Yas, Al Ain Zoo, Al Wathba and Al Jarf.

Arabian Oryx Release Program (2007 – 2012)

The five-year plan (2007- 2012) to reintroduce the Arabian Oryx into areas of its natural habitat in the UAE involves 500 heads of Arabian Oryx to be released over the five-year period with 100 heads each year. The program, which is overseen by the Terrestrial Environment Research Centre at the Environment Agency –Abu Dhabi (EAD), aims to reintroduce the Arabian Oryx into large sanctuaries within the areas they lived in the past and create a self-contained population that can roam freely in their natural habitat with effective and long-term management.

Release Arabian Oryx in Wadi Rum

Twenty Arabian Oryx (8 males and 12 females) were released in 2009 in the Wadi Rum Protected Area of Jordan. The release was part of H.H Sheikh Mohammad Bin Zayed Al Nahyan's, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, initiative to reintroduce the Arabian Oryx into its natural habitat in Jordan. The project began when the Environment Agency - Abu Dhabi (EAD), which chairs the Coordinating Committee for Conservation of Arabian Oryx, and Al Aqaba Special Economic Zone Authority Aqaba Special Economic Zone signed a sponsorship agreement in 2007. Under this agreement, EAD is sponsoring the \$1.100 million three-year project which entails several components, including the reintroduction of the Arabian Oryx into the Wadi Rum Protected Area. This also includes rehabilitating the habitat and helping local residents to improve their living standards.

The Oryx release, which came after 8 decades of extinction in Jordan, which are the first herd to be released in Wadi Rum, were placed in enclosures to give them the opportunity to adapt to the desert habitat. The released animals will be monitored by satellite to track their movement and behavior to ensure the animals' safety.

During the first phase of this project, a management committee was set up to oversee implementation of the program. The Committee is composed of representatives from EAD, Al Aqaba Special Economic Zone Authority and the Jordan Royal Society for the Conservation of Nature. Today, the UAE hosts the largest group of Arabian Oryx in the world with around 3,000 Oryx in the UAE.

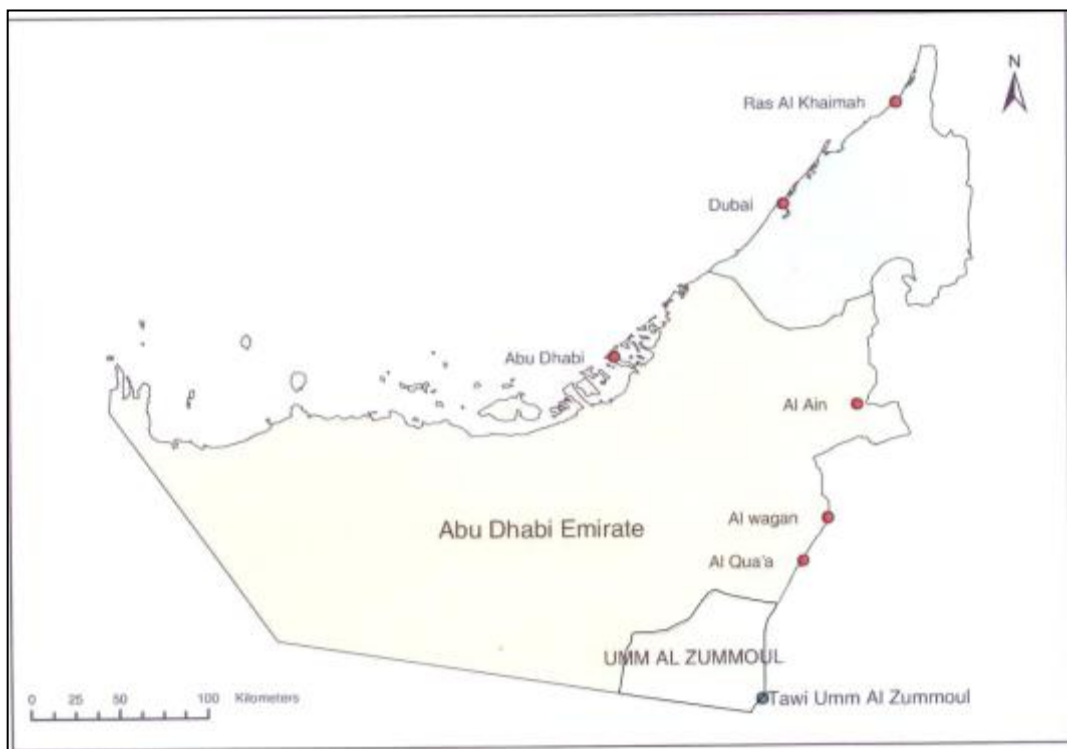
Al Ain Zoo

Played an active role in the Arabian Oryx reintroduction program across all its stages from donating a significant number of animals to choosing reintroduction sites and providing veterinarian supervision. Each animal was given an identification number and the genetic sample was collected in order to help study the animal's genetic status.

Arabian Oryx Sanctuary in Umm Al Zamool

The Arabian Oryx Sanctuary in Umm Al Zamool stretches over an estimated area of 8,900 square kilometers area which currently has nearly 155 heads of Arabian Oryx. The sanctuary started with 99 captive-bred Arabian Oryx which were reintroduced to the area after 40 year of absence.

The reintroduction sites are selected according to the nature of the area, suitability of the habitat, vegetation, human activity and availability of food, water resources, shade and hiding places. The reserve also helps the survival of other animals living in the area as deer, foxes, desert rats, hares, reptiles and birds.



Regional Efforts

The efforts to release Arabian Oryx into the wild transcended the national borders of the UAE when Abu Dhabi adopted regional projects through HH Sheikh Mohammed bin Zayed Al Nahyan Initiative to reintroduce Arabian Oryx to its natural habitat. The initiative reintroduced 20 heads of Arabian Oryx, 8 males and 12 females, in Wadi Rum in South Jordan after eight decades of their extinction under a three year \$1.1 million agreement with the Aqaba Special Economic Zone Authority to support and finance the reintroduction of 60 Arabian Oryx in the area.

Coordinating Committee for the Conservation of the Arabian Oryx

Recognizing the country's efforts in the field of environmental and wildlife conservation in general and Arabian Oryx conservation in particular, the UAE was granted the chairmanship of the Coordinating Committee for the Conservation of the Arabian Oryx which was set up in 2001.

The Committee, its secretariat and fund is chaired by EAD and comprises the UAE, Saudi Arabia, Oman, Qatar, Bahrain and Jordan in addition to representatives from the World Wide Fund for Nature (WWF) and International Union for Conservation of Nature, the agencies responsible for conservation and reintroduction of endangered species. The Committee facilitates joint action and coordination of efforts to preserve the Arabian Oryx in countries where they live and seeks to reintroduce them as free roaming herds in their natural habitat in the Arabian Peninsula and neighboring countries.

Environment Agency Abu Dhabi (EAD) Conservation Programs

- Arabian Oryx Reintroduction Program.
- Houbara Bustard Reintroduction Program.

- Wildlife translocation and Management.
- Establishment of protected areas.
- Establishment of Al Ain Zoo.
- Biodiversity Assessment on Abu Dhabi Islands
- Bird Movement and Migration (tagging and tracking)

Wildlife Protection and Environmental Laws

Federal law 24/1999 and Federal law 23/1999 are the two most important laws deal with the environment and wildlife conservation. The Federal law 24 of 1999, modified in 2006, for the " Protection and Development of The Environment" covers most aspect of the country's natural environment. The first six chapters state the law. Article No. (12) Deal with killing animals and birds those identified in three appendixes (see appendixes No. 1, 2, and 3). Chapter Seven (articles 69-72) has provision for liabilities and compensation for environment damages. Provision for penalties are dealt chapter Eight (articles 73-90). Articles 63-68 under chapter Six deal with the " Natural Reserve" and prohibit hunting; transportation or killing animals and birds, beside encouraging studies and monitoring, leading to establishment of reserve, protection and monitoring of biodiversity.

A Federal decree (law No. 9) of 1983 'Regulating the Hunting of Birds and Animals' is another piece of legislation to protect birds. As per articles 1 of the hunting gathering or destruction of eggs of land or seabirds is banned. Provision for the protection of country's natural environment is made in Federal law 23 of regulating the exploitation, protection development of marine biological resources, indirectly also protect birds. The Federal law number 2002 deal with the regulation and control of International trade in endangered species. Country is a signatory to nearly 16 international regional conventions on wildlife and environment including the convention on Biological Diversity (CBD), the convention on international trade for endangered species (CITES) and the convention on protection of Marine Environment (ROPME).

Red list

The red list of the Emirates flora and fauna according to the IUCN categorization is updating in an annual manner.

2

**Critical Habitat
Protection**

Critical habitat protection

UAE has established 60 protected areas: **38** Terrestrial, **21** Marine, and **1** Coastal including both terrestrial and marine; all these protectorates are **fragile habitats** that exceed 15% of the country surface.

Through the Ministry of Environment and water strategy 2011-2013 (Enhancing environmental security), the initiative of improving the protection level of the fragile habitats is included the following activities:-

1. Identification of the critical habitats for selective sites in UAE, by the end of 2012.
2. Carrying out flora and fauna surveying for these selective sites, then declaration of these sites as protected areas that will help in realizing the 100 % protection for the country fragile habitats target as EPI requirements, (critical habitat protection indicator).
3. Establishment of the National biodiversity strategy by the end of 2013.
4. Raise up the percentage of officially declared protected areas to 10 % of the country area as CBD and the EPI Biome protection requirements.
5. Consequently, improve the country EPI level.

The National Strategy to Combat Desertification

Ministry of Environment and Water released the National Strategy to combat desertification.

The Importance of the National Strategy to Combat Desertification in U.A.E.

- Reduce Global Warming.
- Maintain Economic Activities, in Particular Renewable Energy Projects.
- Physical Protection of Facilities in Remote Areas.
- Conserving the Groundwater.
- Conservation of Biological Diversity in the Desert Environment.

Program No. (1)

Preserve Renewable Natural Resources:

- Rehabilitation of degraded natural resources.
- Increase use of non-conventional water resources to meet the demand for water.
- Rationalize and regulate the exploitation of renewable natural resources to ensure sustainability.
- Mitigate the effects of drought.

Program No. (2)

Drought impact and mitigation: Assessment of precautions taken to drought and mitigation.

- Modernize the methods and technical monitoring of hydrological information to strength early warning system.

Program No. (3)

Reducing erosion and stabilizing sands

- Identify sites affected by water erosion, wind direction, speed of cyclones and seasonality.
- Encourage trend in establishment of green belts around cities. Evaluation of physical, chemical and biotechnology methods to control sand movement.

Program No. (4)

National manpower development

- Expansion in highlighting the importance of combating desertification.
- Promote and support applied research institutions working in the field of combating desertification.
- Encourage and support the transfer of modern technologies.

Mechanism for implementation of the strategy

- Adoption of the strategy Board policies.
- Continuity of the scientific group.
- Announcement of the national strategy to combat desertification.
- Include in the annual budget, programs and activities approved by the Committee of stakeholders.

Soil Survey of Abu Dhabi Emirate

An Emirate wide soil mapping completed in two phases;

(1) Entire emirate at a scale of 1:100,000; and

(2) 400,000 ha area, evaluated as suitable for agriculture extension at a scale of 1:25,000. The following were achieved from the project:

- A total of 55,000 observation sites were dug, described, classified, and studied; 22,000 during extensive survey and 33,000 during intensive survey.
- Sixty two soil families and phases of families (phase 1), and forty seven soil series and phases of soil series (phase 2) have been recognized in the emirate.
- 2300 soil samples analyzed to support soil classification and soil and thematic maps and results entered to soil database.
- A comprehensive soil archive established housing 2300 systematically
- Arranged soil samples and six soil monoliths.
- Soil and thematic maps (current land use, vegetation, land degradation, Resources and suitability) published at scales 1:25,000; 1:100,000; 1:250,000 & 1:500,000 as appropriate.
- Abu Dhabi Soil Information System (ADSIS) established to store, retrieve, examine, interpret, and present results for land use planning. ADSIS will be available through EAD website for public and advanced users.
- Quality control and quality assurance measurements for the project results were conducted by USDA experts visited Abu Dhabi to ensure all project deliverables meet the latest standards set by USDA Soil Taxonomy.
- Discovery of unique Anhydrite soil in the Coastal lands of Abu Dhabi Emirate is being considered for a change in USDA soil taxonomy.

- Comprehensive project documentation in five volumes (hard copies and CD).
- Project results published in peer reviewed refereed international Journals and conference proceedings.
- UAE nationals trained to build in country talent to maintain such activities.
- Owing to the importance of soil survey project, Abu Dhabi Executive Council approved Northern Emirate Soil Survey Project and provided Funds.
- Project results will be shared with the International Scientific community through International Conference titled “Soil Classification and Reclamation of Degraded Lands in Arid Environments”, 17-19 May 2010 in Abu Dhabi.

Plant Conservation and Habitat Restoration

- Specimens of many native plant species were collected and have been added to EAD Herbarium in 2009. EAD Herbarium now houses a collection of 3000 specimens representing 85 plant families. The well represented plant families in the Herbarium are the grass family (Poaceae), followed by the pea family (Fabaceae) and daisy family (Asteraceae).
- Collection and conservation of seeds of threatened species for the seed bank is ongoing. This makes seeds available for species re-introduction in to the wild, thereby conservation of the flora. Seeds of important wild plants were collected and added to the EAD seed collection. EAD seed collection now houses seeds of 69 native plant species representing 25 plant families. Germination trials were also conducted for native plant species in growth chamber as well as outside to check the germination rate and viability of seeds at specific conditions. So far germination experiments conducted for about 45 selected plant species. Of these around 75% of plant species exhibits high germination rate.

- Vegetation survey was conducted at several sites throughout the year to document the vegetation and habitat types. A rapid vegetation survey was done in the western region of Abu Dhabi Emirate, to identify the basic habitat type and to document the diversity and density of plant species. Vegetation and habitat data were collected from Jebel Hafit and updated the plant check list for Jebel Hafit. Baseline vegetation data was also collected from the nearby Islands Abu Dhabi Emirates. This has helped to document the plant species and the natural habitat types of the Islands before they get completely vanished.

Forests

- Operation and Maintenance of Abu Dhabi forests which includes the followings:
- Identification of Plant species for future replanting and its suitability for different locations.
- Follow up on the health condition of different plantations.
- Work on the identification of the actual water requirements of different trees.
- Management of wildlife with forests.
- Reduction of negative impacts of some forestry related practices and the use of alternative sources of energy.

Abu Dhabi Global Environmental Data Initiative (AGEDI)

AGEDI was conceived by EAD in 2001 and launched by the UAE Government in 2002, during the United Nations World Summit for Sustainable Development in Johannesburg, South Africa. EAD is

AGEDI's lead implementation agency while the United Nations Environment Program (UNEP) is its main partner and implementer at the regional and global levels. The initiative aims to provide high-quality environmental data that conforms to appropriate standards. Such data should help integrate and derive appropriate information that contributes effectively to the environment's preservation and protection. Additionally, the initiative looks at the role of modern technologies and multimedia in publishing environmental data and information in ways that allow broad access by various stakeholders. This is expected to significantly diffuse environmental awareness and knowledge within the community at large. In the initiative's second phase, efforts continued on updating the first phase's outputs, while simultaneously launching new activities on the exchange of information and knowledge. In parallel with the national and international efforts, the information products developed for the local level will be expanded to meet national, regional, and global needs.

Local Level

- Update environmental sector papers and build the knowledge base.
- Improve the geospatial portal and update the initiative website.
- Assess environmental baseline data and develop a strategy to support decision making.
- Finalize the first phase of the Land Use Land Cover Information System.

- Update the State of Environment report for the Emirate of Abu Dhabi.
- Prepare the Abu Dhabi Environmental Atlas.
- Support the development of the Environmental Performance Index for the Emirate of Abu Dhabi.

National Level

- Support the second phase of the national Ecological Footprint, which was successfully completed.
- Signed an agreement with the Ministry of Environment and Water to establish the National Environmental Database and prepare the National State of Environment report.

Regional Level

- Organize the global meeting of the Environmental Information Network (EIN) in cooperation with the United Nations Environmental Program (UNEP), in order to exchange experiences and best practices for improving environmental information and its access around the world.
- Prepare an atlas of environmental changes for the Arab world in Partnership with UNEP. The atlas aims to provide scientific evidence of rapid environmental changes that occur throughout the Arab world and to increase awareness among the general public and policy makers, and to attract the world's attention to the changes that occur at the local level. Plans are underway for Phase III of the initiative, which is characterized by a qualitative shift in terms of institutionalizing the results at the local level and transitioning to the national, regional, and global levels. This phase also includes a

study of climate change at the regional level and preparation of an atlas to monitor regional changes.

Invasive plant species

Invasive plant species don't pose the same problem to the natural environment as they do in more temperate regions of the world, simply because of the harshness of the climate. Although a number of species have profited from anthropogenic habitats such as lawns (including *Coronopus didymus*) and urban wasteland, these species cannot survive in the natural desert landscape where the regular input of water is lacking.

There are several species that have probably greatly expanded their population in the far east of the Emirate, and especially in the northern Emirates where rainfall is higher. The main problematic species there is the *Prosopis juliflora* (mesquites) which is able to reproduce rapidly and occupy large areas of disrupted ground and some wadis. Less of a problem are species such as *Crotalaria procera* ('usher'), an extremely fast-growing, toxic large shrubs to small tree that can begin producing flowers and fruits at an early age. This species of sandy gravel Plains, which is also found in urban environments and by roadsides in the north-east of Emirate becomes increasingly rare towards the south-west, with only isolated individuals in true desert environments. One it has gained a foothold, though, it is a persistent plant that is hard to eradicate.

Marine Invasive Species

The invasion of alien species is one of the most serious and growing threats to the UAE's marine environment. To identify these threats and develop a prevention plan, EAD continued to carry out monthly field surveys in primary reception areas including harbors and ship anchoring areas. Water samples collected in Mina Zayed and Ruwais indicated a significantly higher diversity of phytoplankton species compared to other areas.

For the first time, a toxic bloom forming species, *Dinophysis acuminata* and *Gyrodinium instriatum*, a HAB (Harmful Algal Bloom) species, were recorded in ship anchoring areas near Abu Dhabi.

Invasive species and captive collections

The country location in the middle of the East and West make it an ideal entry and transit point for many species of birds. Birds, brought illegally from various parts of the world are a major cause of concern for the convention on International trade in Endangered Species of Wild Flora and Fauna (CITES) implementing authority in the country. Many of these species, brought in as pets get accidentally released and sometime even intentionally. Such release of species, which are non-native to the country or region, can have severe implications of the native avifauna of the country. It is well established that non-native or alien species, tend to be a more aggressive and more adaptive, and can quickly propagate and compete with the native species for feeding, nesting and resting spaces. Some species have potential to become pest of crops and orchards (e.g. Ring- Necked parakeet) or nuisance at public places and gardens (e.g. Common Mynah).

- Falcon registration and Falcon passport Scheme initiated by UAE is a step to control and regulate the trade besides providing useful data on falcon demography. At present, 75 to 80% of all the birds in the UAE are registered. Saker constitutes about 41% of all the registered falcons.
- A lot of illegal fauna trade such as Falcons, shahtoosh (shawls made from the Tibetan antelope, *Pantholops hodgsonii*), monkeys, foxes,

Ivory, crocodiles, have been confiscated by the authorized persons, and an annual report is published regarding this issue.

- Strict enforcement of CITES combined with an education and awareness program, both on the legality of keeping species as pets and in pet shop to raising awareness about the possible impact of the intentional and unintentional release of birds is vital for health and integrity of the respective ecosystems. Capacity building is carried out for the veterinarians and costumer employees by the ministry of Environment and Water (MOEW) in cooperation with the competent authorities and some NGOs.

Some of bird habitats in the UAE

Near-shore and off-shore islands. The United Arab Emirate has many offshore islands, varying in size from part of km² to several hundred square kilometers. These islands are strategically important for seabirds' colonies. Offshore islands are possibly the most important areas for conservation of avifauna. Almost all the breeding colonies of terns, Socotran Cormorant, Sooty Falcon and Osprey are confined to the islands.

Mountains, Rocky habitats

Mountains and Rocky habitats provide a range of feeding, breeding areas for many resident and migratory birds. Jabel Hafit and associated wadis near Masafi, Dibba and Ras Al Khaimah are typical examples for this habitat types. Hume's Wheatear and sand Partridge are the most characteristic bird species of the mountains. Scattered *Acacia* trees dotting the wadis providing ideal foraging and feeding opportunities for plain Leaf Warbler, Green Warbler and lesser Whitethroat. Species of national and regional importance, the Lapped-faced Vulture and Egyptian Vulture are seen soaring over the mountains. Kestrel and peregrine falcon also occur in the mountains and possibly breed in some localities.

Status of birds in the United Arab Emirate

Bird diversity

More than 435 species of birds have been reported in The United Arab Emirate. Despite that fact that there are no endemics and very few species listed as threatened, the country has a significantly large and important breeding colonies of seabirds. Many of these colonies are regional and globally important by virtue of holding > 1% of the total bio-geographical population. An estimated 300.000

birds use for vast inter-tidal zone at the peak of migration. The strategic location of the UAE in the Arabian Gulf makes it an important area for migratory birds. Of the total 29 avian orders present in the world birds belonging to 20 order are found in the UAE. The number of orders found in the UAE is 90% of the total number of bird orders found in the entire Middle East Struthioniformes and Gaviiformes are the two orders which are found in the Middle East but are not represented in the UAE. Avifauna of the country is represented by 61 families which is 67% of the total bird families in the Middle East and 32% of the world. Number of species found in the UAE is nearly 4.5% of the total bird species in the world; however it constitute 53% of the total bird species found in the Middle East.

Patterns of bird distribution

Breeding birds of the UAE

At present a significant proportion of the total bird species breed in the UAE. This includes both resident and migrant breeders. Although most of the species breed during summer (May-August). Species such as Osprey, Socotra Cormorant. Red-billed Tropicbird and Brown-necked raven breed during winter (November-April) months. Of the 435 bird species in the UAE. More than 31% of them breed within the country limits either as resident or migrant breeders. Non-breeding migrants constitute the bulk of the entire UAE and Abu Dhabi avifauna.

Land birds and Water birds.

More than half of all the bird species found in the UAE are Land birds. Often the distinction between Land birds and water birds is not very easy, especially for edge species which use land and water inter-face such as Kentish Plover and Red-wattled plover.

Birds and habitats

In the UAE, seven broad habitats are recognized, which includes green areas containing artificial plantations, gardens and parks and inland wetlands. Both these areas have increased in size and extent over the last few years providing more feeding, resting and breeding opportunities to both resident and migratory avifauna. Thus it is not surprising that a good proportion of country's avifauna is represented by these two habitat types. In the Emirate of Abu Dhabi, area under forestry increased by more than 60% from 190,733 ha in 2001 to 352,433 ha in 2003, whereas area under agriculture increase from 36,009 ha in 1996 to 754,490 ha by 2003. Public gardens and parks cover roughly 10,000 ha of the total land area in the Emirate. Large flocks of Collared Dove and spread of Grey francolin is a result of the expansion plantations and cultivations.

The sand desert species constitute a very small proportion of the total avifauna of the country. Only about 3% of all the bird species seen in the country occur in desert type. Despite the fact that the sand desert occupies the largest area of any habitat type in the UAE, the number of species is very low. There are only 6 species which can be classified as typical desert species. Hoopoe Lark is one of the best examples of a true desert species.

Threats to birds

The rapid rate of development in the UAE following the discovery of oil has fast transformed the ecological landscape. Unfortunately, many of these development activities have directly or indirectly impacts on the natural habitats and the species. Much of this development was initially related to the coastline but is now spreading to desert areas, mountains and offshore islands, where these are the natural habitats of many species of plants and animals and consequently

threatening their occurrence. Reported decline of some of the breeding colonies of Socatran Cormorant in the country is attributed to development.

Important and threatened birds in the UAE

Nearly 17% of all the species occurring in the UAE are important and of conservation priority. This includes species which are listed as globally threatened by the Birdlife International or those which are regionally threatened and locally important.

Regionally important species

Eleven regionally important species (RI) occur in the UAE. Almost all of them breed in the country. It includes Western Reef Heron; osprey, Black winged Stilt; Kentish plover, sooty Gull and the Greater Flamingo. The Greater Flamingo has successfully bred at Al Wathba Wetland Reserve in Abu Dhabi Emirate.

Institutional set-up for research and monitoring

The Environment Agency-Abu Dhabi (EAD) is involved in all aspects of bird studies at the government level. The National Avian Research Center, both part of EAD. Are actively involved in bird studies in Abu Dhabi Emirate, however as the Agency's mandate is for Abu Dhabi Emirate, studies on other emirates , bird fauna are limited. The Emirates Natural History Group (ENHG) with several active members collects useful information on birds.

Invertebrate Research and Monitoring

- Collection of invertebrate specimens using several methods, species level identification is being done in collaboration with international specialists. 46 Genus/species identified from the collected specimens of Invertebrates in the current year.
- Developed distribution map of Ant-lion species (Neuroptera: Myrmeleontidae) and a poster being developed would be presented in International Neuropterological Symposium, Azores.
- Developed distribution map of insect orders in the Abu Dhabi Emirate.
- Conducted rapid invertebrate base line survey in nearby islands of Abu Dhabi Emirate. Insect diversity on the surrounding Islands of Abu Dhabi is moderate with 12 orders of the 23 listed insect orders of UAE fauna.
- Wildlife baseline survey is being carried out in Western Region of the Abu Dhabi Emirate to understand the diversity, distribution, abundance, and seasonality of ground dwelling invertebrate species. Pitfall traps were used to study the diversity and seasonal abundance of Invertebrates especially ground dwelling darkling beetles (Tenebrionidae) at five desert sites in the Western Regions of Abu Dhabi Emirate. In all 5845 Invertebrate specimens were captured, representing more than seventy eight species. The most abundant were Tenebrionid specimens. From all sites 4887 were trapped, representing 15 species of beetles. Several new records of invertebrates collected and study on two new species of spider is in progress.

Bird Monitoring and Conservation

- EAD discovered a new breeding colony of the Greater Flamingo in Abu Dhabi. This is only the third successful and the biggest breeding of Greater Flamingo in the UAE. The new breeding colony located in Bu Al Syayeeef produced 801 chicks.
- A flamingo management program for the flamingos in the new breeding colony is implemented. It encompasses routine monitoring of the flamingos and supplemental feeding at few selected sites in the area.
- An extensive Osprey breeding survey was undertaken which showed presence of 212 nests in the Abu Dhabi Emirate, of which more than 100 nests were active and about 15 nests are attended by birds that did not breed.
- A single young Steppe Eagle was successfully tracked from Abu Dhabi to its wintering area in Yemen and then on the spring migration to Kazakhstan. The bird has already reached Ethiopia on its 2nd winter migration since the deployment of the satellite transmitter in Abu Dhabi in January 2009.

Monitoring of wild birds for Avian Influenza throughout the UAE continued for the third year and on an average 40 sites has been regularly surveyed each month. No large-scale mortality was recorded during the year.

Amphibian Chytrid Fungus Survey

The Chytrid fungus (*Batrachochytrium dendrobatidis*) is attributed to have caused the decline or extinction of about 200 species of amphibians worldwide. It has also spread rapidly worldwide through the international pet trade in amphibians. The UAE has 2 species of toads: the Arabian Toad (*Bufo arabicus*) and Dhofar Toad (*Bufo dhofarensis*), however never before had a systematic survey on this fungus

been conducted in the UAE. EAD is currently conducting a survey on wild UAE toad populations and has managed to sample Arabian Toads (*Bufo arabicus*) in Wadi Wurayah in the Emirate of Fujairah.

UAE Terrestrial and Freshwater Invasive Species Assessment

An assessment was conducted on the terrestrial and freshwater alien invasive species of the UAE via literature review, questionnaires and surveys. There are approximately over 100 alien species recorded within the UAE.

Reptile Baseline Surveys

EAD monitored reptiles on several offshore islands off Abu Dhabi Emirate to update its records from previous surveys.

Baseline surveys have been carried out along 5 sites in the Western region of Abu Dhabi Emirate. A scientific paper consisting of a checklist of all the amphibians and reptiles occurring in the UAE has been submitted to an international journal. This is important in order to determine the exact number of species occurring within the UAE.

3

Marine Protection

3. Marine Protection

In order to ensure a sustainable and healthy marine environment in UAE, the Ministry of Environment and Water (MoEW) has decided in 2011 to launch a process for developing a national marine environmental strategy for UAE.

As a first step in this process, the present strategy formulation project is an opportunity to develop the Marine Environmental Strategy and to elaborate an outline of the action plans, which are essential for the practical implementation.

Detailed action plans should be elaborated and implemented by the individual Emirates, according to their specific resources and environmental challenges.

As part of the strategy preparation, an overview of the present knowledge on the status of the marine environment in the UAE is being presented. Also an overview of the legislation and regulations that currently set the framework for the strategic directions is presented and included in this document.

The marine environment provides invaluable ecosystem services that play a crucial role in the socio-economy of the modern UAE nation. Currently, the marine environment and ecosystems in the UAE show a range of signs of stress and significant environmental loads and pressures, caused by many years of large-scale coastal development, extensive exploitation of marine resources and population growth.

The basic perspective of the strategy is that the strategy must be able to set the direction for environmental conservation efforts, define the action plans, facilitate a common vision for all stake holders and support international cooperation in marine environmental conservation. However, the developed strategy must remain flexible allowing regular revisions, while ensuring that the long term objectives of the strategy remain same irrespective of the revisions.

A range of basic principles (including the ecosystem approach) could be considered as key pillars in the strategy.

A Marine Environmental Strategy

While the aim of the Marine Environmental Strategy is to *"enhance the conservation of the marine environment by promoting sustainable use of the sea and preserving marine ecosystems"*, the scope of the strategy should *"target the UAE marine environment and reach towards UAE neighbors in the Arabian Gulf"* and *"ensure a widespread stakeholder involvement and define stakeholder responsibilities"*.

The vision for the Marine Environmental Strategy may be defined along the lines of the MoEW's organizational vision i.e., *"Assuring environmental sustainability for life"*.

Likewise, the mission for the Marine environmental Strategy is *"With the Marine Environmental Strategy, the MoEW strives towards conservation and integrated management of the marine environment, ecosystems and natural resources to realize green economy for the present and future generations"* which is formulated in line with MoEW's organizational mission.

The UAE Marine Environmental Strategy will be structured along a set of specific objectives, which - when applied as a whole - will serve to ensure that the overall aim of the Marine Environmental Strategy will be accomplished.

The main themes of the marine environmental strategy will be accomplished through the following set of specific objectives and each of the below listed objectives will be achieved by means of the preparation and execution of specific sets of action plans and other concrete initiatives;

- Legal objectives
- Governance objectives
- Scientific and technical capacity objectives
- Management objectives
- Public awareness, involvement and education objectives

The overall aim of the "legal objectives" is to ensure that the UAE legal and regulatory system is providing an adequate framework for targeting sustainable environmental management of the marine resources and ecosystems.

The overall aim of the "governance objectives" is to ensure that the institutional framework is adequate for the environmental authorities and other stakeholders to execute their respective responsibilities, individually and in joined, collaborative efforts.

The overall aim of the "scientific and technical capacity objectives" is to facilitate a strengthening of the technical skills, including research, and ability to carry out adequate environmental protection measures, first of all at the MoEW and in the environmental authorities in the Emirates, but also at other relevant stakeholders.

"The management objectives" serve to ensure that a range of management initiatives will be deployed in the UAE to strengthen the protection of the marine environment and to increase the knowledge basis for planning and carrying out management measures.

The "Public awareness, involvement and education objectives" focus on public information and involvement on the one hand, and on education as a means to enhance environmental and ecological understanding on the other hand.

Coastal Zone Management

Abu Dhabi's coastal areas are being subjected to multiple use by different stakeholders including; ports and shipping, recreational uses, tourism, fishing activities, urban development and human settlements, coastal development and conservation of the natural environment. As the lead agency of the Coastal Management Committee, which was established by the Abu Dhabi Executive Council, EAD has been taking steps to reconcile the needs of these different users through an integrated master planning approach.

Achievements in this regard:

1. An Integrated Coastal Zone Management (ICZM) Higher Committee was set up, and includes 13 government Agencies.
2. ICZM initiatives were included in the Maritime Strategy for Abu Dhabi (which was developed by the Critical National Infrastructures Authority), with EAD as a lead.
3. Coastal areas, of significance to habitats and species, were identified to be protected in urban planning. This included coral reefs, mangroves, intertidal mudflats, sabkhas and sea grass meadows.
4. EAD completed Coastal Development Guidelines with spatial zoning for Plan Abu Dhabi 2030, in coordination with the Abu Dhabi Urban Planning Council. These guidelines are a zoning guide that highlights important habitats for protection including the Eastern Mangroves, Ras Ghurab Mangroves, intertidal areas in and around BulSyayeeef and the coral reefs of Ras Ghanada.
5. EAD completed Coastal Development Guidelines with spatial zoning for Plan Al Gharbia 2030; in coordination with the Abu Dhabi Urban Planning Council This is a zoning guideline that identifies hotspot areas within Al Gharbia that should be

taken into consideration as the government prepares for development of this part of Abu Dhabi.

6. Reviewed existing legislation relevant to coastal area management.
7. Reviewed Environmental Impact Assessments, environmental implications and mitigation options.
8. In coordination with the Tourism Development Investment Company, EAD launched a project to rehabilitate critical habitats and a mangrove plantation project on Saadiyat Island for 500,000 saplings has been facilitated.

Marine Water Quality

EAD's marine water quality survey measures ambient water quality conditions in order to detect the effects of human activities on habitats and water dependent resources. The Agency continued to monitor 11 sites in Abu Dhabi and this year it initiated an out fall survey to identify sites for automation of water quality monitoring.

The survey results revealed that the water quality in Abu Dhabi is highly varied. In well-mixed areas such as open sea, the water quality parameters appear reasonably good. However, due to the increase in anthropogenic activities, the water quality has been affected in confined areas and the level of different chemical parameters has increased. Marked increases in concentration of nutrients, especially nitrates and silicates were recorded in coastal areas. This indicates that human activities along the coast have increased and affected near shore water quality. Continuous monitoring by the Agency indicated that the water quality of public beaches in Abu Dhabi is normal. In 2009, an increased number of algal blooms (15 incidences) were reported.

The most probable cause is effect of eolian dust from increasing land filling activities and developments on various islands and coastal areas. EAD also recorded a high number of jelly fish blooms (4 incidences) in Abu Dhabi waters. A major fish kill incidence at Umm Al Nar was investigated and the presence of high concentration of chlorine was found, presumably from outlets nearby.

Coastal Wetlands

Coastal wetlands such as sea grasses, salt marshes and mangroves contribute to coastal water quality by removing excess nutrients and pollutants. They also offer important habitats for coastal and marine wildlife. In 2009, EAD continued to study these key coastal and marine habitats in order to develop a conservation and management plan.

In these areas, EAD recorded mangroves that varied from 1.5 m to 7 m, whereas density varied from 25% to 80%. Bu Tinah, the Eastern Corniche and Ras Ghanada had the most dense mangroves. Seagrass locations (GPS points) collected during field and aerial surveys supplemented by high resolution remote sensing images are being used to develop a sea grass map for Abu Dhabi waters. *Halodule uninervis* is the dominant species with a very high relative abundance of 68.4% (winter) and 32.2 % (summer) followed by *Halophila ovalis* with relative abundance of 9.6 % (winter) and 8.1 % (summer). The third species *Halophila stipulacea* was least common with an average abundance of 7.5 % in winter and 5.1 % in summer. Sites within Marawah Marine Biosphere Reserve and Umm Al Hatab NW recorded high percentage of sea grass cover both during summer and winter; however, the pattern of dominance remains the same. In the UAE, sea grasses are distributed up to 13 m at low tide. However, the percentages cover of sea grasses at depths 2 – 6 m was high compared to sea grasses at depths beyond 6 m and below 2 m. Both *Halodule uninervis* and *Halophila ovalis* occurred on all depth ranges. *Halophila stipulacea* was observed between 2 to 6 m. GPS locations of sea turtles

nesting have been primarily used for mapping of sandy coastline for the Emirate of Abu Dhabi. Mapping of sandy coast intends to include important wildlife areas such as shoreline bird roosting and a draft map has been completed.

Coral Reefs

In partnership with Emirates Wildlife Society-World Wide Fund for Nature, Dolphin Energy and SCENR-Qatar, EAD continued to advance the conservation, management and sustainable use of coral reefs and associated habitats, by ensuring the availability of accurate information for decision making. So far, some of the deliverables of this project have been a comprehensive coral reef map and a coral reef conservation plan. The findings include clear signs of the coral system's resilience and active signs of regeneration. Recommendations included establishing Ras Ghanada as a Coral Reserve. In 2009, EAD, along with its partners, continued to monitor 10 permanent coral reef stations through the collection and assessment of a number of parameters that include temperature, the condition of corals and other associated indicators to determine the general health of coral communities, which constitute one of the most ecologically important coastal habitats in Abu Dhabi waters.

Fish Landings and Population Dynamics

EAD monitors fisheries and assesses the status of associated resources in the Emirate. EAD conducted stock assessments for 11 species and revealed the following:

- Hamour, Farsh and Shaari species were still being over-exploited.
- Attempts to decrease fishing mortality through effort constraints have failed to have a significant impact.
- The introduction of juvenile escape panels has failed to modify selectivity characteristics and reduce the retention of juvenile fish in the demersal

trap (gargoor) fishery. Gargoor is a dome shaped mesh-wired baited fish trap.

- Additional fisheries regulations need to be considered, if stock rebuilding targets are to be achieved, these include the consideration of:
 - 1) A suspension on the use of traps in the demersal fishery.
 - 2) A ban on fishing by non-Abu Dhabi registered fishing vessels.
 - 3) Modification of the design of the existing juvenile escape panel.
 - 4) Improved monitoring, control and surveillance.

EAD also began collecting data on 6 new species. They are Beyah Arabi (*Valamugil seheli*), Sikkil (*Rachycentron canadum*), Shaam (*Acanthopagrus latus*), Nagroor (*Pomadasys argenteus*), Hamra (*Lutjanus malabaricus*) and Hilali (*Plectorhinchus gaterinus*). Of the 8 species assessed during 2009, which included by-catch, only Qabit (*Rhabdosargus sarba*) was over-exploited.

EAD also monitors commercial fisheries and the productivity of marine resources, so as to provide data for fisheries management purposes. In cooperation with the Ministry of Environment and Water, EAD is developing a web-based integrated National Fisheries Information System that can be used jointly to monitor, plan and manage the UAE's commercial fisheries.

Fish Eggs and Larvae

EAD continued to survey the spawning and nursery grounds of fish, since the larval phases of fishes are extremely vulnerable to any changes in the environment due to coastal development.

Survey Results

- The distribution of fish eggs was varied spatially and temporally. The number of eggs present in Abu Dhabi waters was between 6.1m³ and 97.6

m3. The maximum number of eggs was recorded in Sir Bu Nuer followed by Ghantoot and Al Yasat.

- The larval distribution also showed variation between sites and seasons. Maximum larval distribution was observed in Sir Bu Nuer followed by Ish, Bu Tinah and Jarnain.
- Fish larvae of the family Atherinidae are the dominant group that occurs in Abu Dhabi waters.
- The peak spawning period of fish stocks in Abu Dhabi waters is summer and is determined by water temperature rather than other environmental parameters.
- In Eastern Abu Dhabi, the most important fish spawning ground can be found in the waters of Sir Bu Nuer followed by Ghantoot, due to the presence of high number of eggs throughout the study period. The waters of Ish, Bu Tinah and Jarnain constantly showed higher number of eggs than other sampling sites in the western side and may be considered as a preeminent spawning ground in the western side.
- Larvae of fifteen species were identified and their distribution and diagnostic characters were recorded.

Aquaculture

In 2009, EAD took the first step towards developing a sustainable aquaculture, as the world faces a decline in fish stocks and threats to national food security. EAD conducted a preliminary survey in the Emirate to select areas suitable for aquaculture development. A desktop GIS study was conducted to identify open areas of suitable land (up to 2km from the coast), followed by a ground-truthing land survey.

Survey results revealed that there was a scarcity of open coastal land available for aquaculture because, as is the trend around the world, Abu Dhabi already has plans to develop the greater part of the coast. Although it was found that pockets of open areas do exist, they are mostly sabkha lands where soil characteristics are not naturally suitable for building. In addition, the depth of sheltered coastal waters was found to be shallow, and not of optimal depth for sea cage culture. However, EAD will continue to work with its partners to identify and secure pockets of open land for the development of coastal aquaculture to alleviate pressure on our fish stocks and provide alternative livelihood solutions for fishermen.

Marine Invasive Species

The invasion of alien species is one of the most serious and growing threats to the UAE's marine environment. To identify these threats and develop a prevention plan, EAD continued to carry out monthly field surveys in primary reception areas including harbors and ship anchoring areas. Water samples collected in Mina Zayed and Ruwais indicated a significantly higher diversity of phytoplankton species compared to other areas.

For the first time, a toxic bloom forming species, *Dinophysis acuminata* and *Gyrodinium instriatum*, a HAB (Harmful Algal Bloom) species, were recorded in ship anchoring areas near Abu Dhabi.

Dugongs

EAD, with funding from TOTAL, is conserving and managing the dugong (*Dugong dugon*) and its habitats in the UAE. EAD is ensuring compliance with regulations, monitoring dugongs and their habitats, collecting biological data and

raising awareness. In 2009, EAD began hosting the Convention for Migratory Species Dugong Secretariat. To date, 11 countries, including the UAE have signed a MoU to conserve the dugong. In 2009, EAD's aerial survey revealed that the population of dugongs in Abu Dhabi waters was estimated to be 2,501 (+ 474). The data, compared to previous aerial surveys conducted in 2004, indicates that the population of dugongs in Abu Dhabi waters is stable. However, the data also showed that over 90% of dugongs occur within the Marawah Marine Biosphere Reserve and the Al Yasat Marine Protected Area compared to the 68% in 2004. This reflects the importance of marine protected areas in dugong conservation. EAD regularly observed several large groups of dugongs, ranging between 20-60 within the Marawah Marine Biosphere Reserve and around the islands of Quffai and Muhayimat in the Western region (Al Gharbia). This furthermore confirms their healthy status.

Surveys on seagrass habitats indicated that seagrass composition and biomass (% cover) were normal. The water quality of the sampling sites were also within the normal range. Visibility underwater (related to light penetration), however, continued to be low throughout the year, possibly due to human activities along the coast. Three dugongs (two males and one female) were satellite-tagged to better understand their migration within the Arabian Gulf. So far, data has revealed that the dugongs of Abu Dhabi waters do not move long distances (maximum: 32.6 km/day; Average: 7.8 km/day) and remain within the protected areas.

At least 12 dugongs were examined for their cause of death. The preliminary investigation revealed that at least 75 % of mortality during the year was due to drowning. This may be attributed to an increase in developmental activities along the coast.

Sea Turtles

EAD continued to monitor the nesting habitats of Hawksbill turtles (*Eretmochelys imbricata*) and foraging areas of Green (*Chelonia mydas*) and hawksbill turtles.

Results

- The turtle nesting season is later than usual. Normally, the nesting season is from March to June. The probable cause of this could be climate change; however this can only be confirmed after having a time series of data over several years and undertaking further studies.
- At least 177 nests were recorded on 14 islands. The average size of the nesting population was 69.4 cm (length) and 63.4 (width). The incubation period was calculated to be 53.6 days and clutch size 51.4 eggs.
- No loss of nesting beaches was recorded during the year. The total length of the nesting beaches in the Emirate of Abu Dhabi continued to be 15643 m.
- A low number of nests were again observed on Jarnain Island. This may be attributed to the ongoing coastal development that has been carried out throughout the nesting season.
- A summer aerial survey revealed that the foraging population of sea turtles in Abu Dhabi waters was around 6,412.
- A winter survey reveals that there is no drop in population size, compared to an earlier survey in 2004.

Dolphins

Information on the abundance, distribution, habitat preference and biology including social behavior of dolphins is yet to be studied in detail. However, EAD has already taken strides in this regard.

During 2009, EAD recorded five species of cetaceans (Bottlenose dolphin, Indo pacific humpback dolphin, short beaked common dolphin, Finless porpoise and Orca). Bottlenose dolphin (*Tursiops aduncus*) was found to be the most common followed by Indo-pacific humpback dolphin (*Sousachinensis*) and short beaked common dolphin (*Delphinus delphis*). Finless porpoise (*Neophocaena phocaenoides*) and Orca (*Orcinus orca*) were seen on very few occasions. Data collected revealed that bottlenose dolphins are widely distributed from shallow water habitat to deep water, whereas humpback dolphins prefer shallow areas (less than 10 m) close to islands. Common dolphins were sighted only in deep water (more than 15 m). The data suggests that the dolphins are more common by the onset of summer (May, June and July). Observation during winter (February and March) was relatively less.

4

Global Climatic Changes Combating

Global climatic changes combating

The UAE has taken commendable steps to combat climate change and to implement the requirements of the United Nations Framework Convention on Climate Change (UNFCCC), and Kyoto Protocol. EAD plays an effective role as a member of the National Committee on Climate Change, which is tasked with putting forth the national communication.

Climate changes EAD also cooperates with the Clean Development Mechanism Higher Committee and leads the executive committee that reviews technical considerations for the introduction of this mechanism in the adoption of projects that help achieve sustainable development, transfer environmentally safe technology to the country, and promote renewable energy.

Second National Communication Report

In cooperation with the UAE's Ministry of Energy, EAD support the financing of developing documentation for the second national communication, which will help fulfill the UAE's legal commitment to the UNFCCC.

Clean Development Mechanism (CDM)

In 2009, five CDM projects were reviewed and evaluated, and the Executive Board of the Clean Development Mechanism, in the UNFCCC Secretariat, approved three of these projects. EAD supervises the Executive Committee for Clean Development Mechanism including the technical and legal evaluation of the projects presented by the investors, the most prominent of which is Abu Dhabi Future Energy Company (Masdar) and has presented the required recommendations to the Supreme Committee, chaired by H.E the UAE Minister of

Energy. Negotiations at Copenhagen In preparation for negotiations at the United Nations Climate Change Conference, held in Copenhagen, EAD:

- Published a study entitled Climate Change: Impacts, Vulnerability and Adaptation.
- Studied the negative effects of climate change on the UAE's economy.
- Coordinated with national partners, the Organization of the Petroleum Exporting Countries and the Gulf Cooperation Council countries to call for compensation for potential economic losses and damages due to decrease in demand of oil and its derivatives. This requires that industrial countries support the UAE to diversify its income resources, capacity Build UAE nationals, use the CDM and introduce carbon storage techniques, within the projects pertaining to CDM. Climate Change Policy & Strategy.
- EAD contributes to the development of the UAE national action plan of climate change, which was sponsored by the National Committee for the Climate Change National Policy and Strategy of the State's Climate Change chaired by Ministry of Environment and Water.
- EAD had initiated the development of Abu Dhabi Climate Change Policy. This is considered the cornerstone of preparing and approving legislations, systems and practices required to limit the negative impact of this phenomenon, and reduce carbon emissions. In this regard, several consultation meetings were held with national and local stakeholders. The first draft was presented in February 2009. The final draft was presented in a second workshop in May. A strategic action plan will also be developed to achieve political and strategic targets of the climate change policy.

EAD Strategy

- a. UAE National Environment Strategy and Action Plan (2000)
- b. Environmental Strategy and Action Plans for the Emirate of Abu Dhabi (2000 -2004) and (2003 -2007)
- c. Abu Dhabi Environment Strategy 2008 -2012
 - i. To enhance a comprehensive understanding of the status of our biodiversity.
 - ii. Identify and monitor ecosystems and species and make predictions about how future pressures, including climate change, will affect them.
 - iii. Establish and maintain a comprehensive marine water quality monitoring Network.
 - iv. To strengthen the policy and legal framework for biodiversity conservation.
 - v. Enhance and implement the legislative framework for biodiversity conservation.
 - vi. Ensure sustainable use and exploitation of biodiversity, by implementing policy, standards, law and voluntary agreements and enforcing standards through the judicial system.
 - vii. Develop a comprehensive, representative and integrated network of protected areas.
 - viii. Strive to minimize the negative impacts of development on biodiversity.
 - ix. Plan and deliver in-situ and ex-situ conservation programs targeted at vulnerable ecosystems and threatened plant and animal species.
 - x. Integrate biodiversity conservation into land-use planning.

5

References & Appendices

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القائمة الأولى

Appendix I

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
الحيوانات الثديية (Mammals)		
<i>Lepus capensis</i>	Cape Hare	الأرنب البري
<i>Gazella subgutturosa</i>	Goitred (Sand) Gazelle	غزال الريم
<i>Gazella gazelle cora</i>	Arabian gazelle (Edmi)	غزال الجبل (الادمي)
<i>Oryx leucoryx</i>	Arabian Oryx	المها العربي
<i>Hemitragus jayakari</i>	Arabian Tahr	الطهر العربي
<i>Caracal caracal</i>	Caracal	الوشق
<i>Panthera pardus nimr</i>	Arabian Leopard	النمر العربي
الطيور (Birds)		
<i>Falco cherrug</i>	Saker Falcon	الصقر الحر
Peregrine Falcon	<i>Falco peregrinus</i>	الشاهين
<i>Chlamydotis macqueeni</i>	Houbara Bustard	الحبارى
<i>Cursorius cursor</i>	Cream coloured Courser	الكروان
<i>Pterocles exustus</i>	Chestnut-bellied Sandgrouse	القطا كستنائي البطن

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
الزواحف (Reptiles)		
<i>Caretta caretta</i>	Loggerhead Turtle	سلحفاة بحرية مثلثة الرأس
<i>Chelonia mydas</i>	Green turtles	سلحفاة البحرية الخضراء
<i>Eretmochelys imbricata</i>	Hawksbill Turtle	سلحفاة بحرية منقار الباشق
<i>Dermochelys coriacea</i>	Leatherback	سلحفاة بحرية جلدية الظهر

القائمة الثانية

Appendix II

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
(Mammals) الحيوانات الثديية		
<i>Paraechinus aethiopicus</i>	Desert Hedgehog	قنفذ صحراوي
<i>Hemiechinus hypomelas</i>	Brandt's Hedgehog	قنفذ براندتز
<i>Procavia capensis</i>	Rock Hyrax	الوبر الصخري
<i>Vulpes vulpes</i>	Red Fox	الثعلب الأحمر
<i>Canis lupus</i>	Wolf	ذئب
<i>Vulpes rueppelli</i>	Sand Fox	الثعلب الرملي
<i>Hyaena hyaena</i>	Striped Hyena	الضبع المخطط
<i>Felis silvestris gordonii</i>	Gordon's Wild Cat	القط البري
<i>Felis margarita</i>	Sand cat	القط الرملي
<i>Mellivora capensis</i>	Honey Badger	غريري العسل
<i>Ichneumia albicauda</i>	White-tailed Mongoose	النمس
<i>Vulpes cana</i>	Blanford's Fox	الثعلب الأفغاني
(Birds) الطيور		
<i>Podiceps cristatus</i>	Great Crested Grebe	الغطاس المتوج الكبير

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Podiceps nigricollis</i>	Black necked Grebe	الغطاس أسود الرقبة
<i>Puffinus griseus</i>	Sooty Shearwater	جلم الماء الفاحم
<i>Oceanites oceanicus</i>	Wilson's Storm Petrel	طائر النوء ويلسون
<i>Oceanodroma lecorhoa</i>	Leach's Storm Petrel	طائر النوء ليتش
<i>Sula dactylatra</i>	Masked Booby	الأطيش المقنع
<i>Sula sula</i>	Red-footed Booby	الأطيش أحمر القدم
<i>Sula leucogaster</i>	Brown Booby	الأطيش البني
<i>Phalacrocorax carbo</i>	Great Cormorant	غراب البحر
<i>Botaurus stellaris</i>	Bittern	الواق
<i>Ixobrychus minutus</i>	Little Bittern	الواق الصغير
<i>Ixobrychus cinnamomeus</i>	Cinnamon Bittern	
<i>Nycticorax nycticorax</i>	Night Heron	بلشون الليل
<i>Butorides striatus</i>	Striated Heron	البلشون أخضر الظهر مخطط
<i>Ardeola ralloides</i>	Squacco Heron	واق أبيض صغير
<i>Egretta gularis</i>	Western Reef Heron	بلشون الصخر (البحر)
<i>Egretta alba</i>	Great Egret	بلشون أبيض كبير

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Ardea cinerea</i>	Grey Heron	البليشون الرمادي
<i>Ardea purpurea</i>	Purple Heron	بليشون أرجواني
<i>Ciconia nigra</i>	Black Stork	اللقلق الأسود
<i>Ciconia ciconia</i>	White Stork	اللقلق الأبيض
<i>Plegadis falcinellus</i>	Glossy Ibis	أبو منجل اللامع
<i>Platalea leucorodia</i>	Spoonbill	أبو ملعقة
<i>Cygnus olor</i>	Mute Swan	التم الصامت
<i>Cygnus columbianus</i>	Bewick's Swan	تم بيويك
<i>Cygnus cygnus</i>	Whooper Swan	التم الصافر
<i>Anser albifrons</i>	White-fronted Goose	الإوزة الغراء
<i>Anser anser</i>	Greylag Goose	اوز أربد
<i>Tadorna ferruginea</i>	Ruddy Shelduck	بط أبو فروة
<i>Tadorna tadorna</i>	Shelduck	الشهرمان
<i>Anas penelope</i>	Wigeon	الصواري
<i>Anas strepera</i>	Gadwall	يط سماري
<i>Anas crecca</i>	Teal	الحذف الشتوي
<i>Anas platyrhynchos</i>	Mallard	الخضاري (أبو حشيش)

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Anas acuta</i>	Pintail	البيلول
<i>Anas clypeata</i>	Shoveler	أبو مجرف (الكيش)
<i>Netta rufina</i>	Red-crested Pochard	الونس
<i>Aythya ferina</i>	Pochard	الحمراوي
<i>Aythya fuligula</i>	Tufted Duck	أبو خصلة (الزرق الأسود)
<i>Mergus serrator</i>	Red-breasted Merganser	بلقشة حمراء الصدر
<i>Pernis ptilorhyncus</i>	Crested Honey Buzzard	حوام النحل المتوج (الأسوي)
<i>Elanus caeruleus</i>	Black-shouldered Kite	الحدأة سوداء الأكتاف
<i>Milvus migrans</i>	Black Kite	الحدأة السوداء
<i>Haliaeetus leucorhynchus</i>	Pallas's Fish Eagle	عقاب السمك بالاس
<i>Gyps fulvus</i>	Griffon Vulture	النسر الأسمر
<i>Circaetus gallicus</i>	Short toed Eagle	عقاب الحيات (صرارة)
<i>Circus aeruginosus</i>	Marsh Harrier	مرزة البطائح
<i>Circus cyaneus</i>	Hen Harrier	مرزة الدجاج
<i>Circus pygargus</i>	Montagu's Harrier	مرزة مونتاجو
<i>Accipiter gentilis</i>	Goshawk	الباز

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Accipiter nisus</i>	Sparrowhawk	الباشق
<i>Accipiter nisus</i>	Levant Sparrowhawk	باشق ليفانت
<i>Accipiter badius</i>	Shikra	الباشق الكستنائي (شيكرا)
<i>Butastur teesa</i>	White-eyed Buzzard	الحوام أبيض العين
<i>Buteo buteo vulpinus</i>	Steppe Buzzard	الصقر الحوام
<i>Buteo rufinus</i>	Long-legged Buzzard	الحوام طويل الساق
<i>Aquila pomarina</i>	Lesser Spotted Eagle	العقاب الأسفغ الصغير
<i>Aquila nipalensis</i>	Steppe Eagle	عقاب السهول (البادية)
<i>Aquila chrysaetos</i>	Golden Eagle	العقاب الذهبي
<i>Hieraaetus pennatus</i>	Booted Eagle	عقاب المسيرة (النتعل)
<i>Hieraaetus fasciatus</i>	Bonelli's Eagle	عقاب بونيللي
<i>Falco tinnunculus</i>	Kestrel	العوسق
<i>Falco amurensis</i>	Amur Falcon	صقر عمورية
<i>Falco columbarius</i>	Merlin	اليؤيؤ
<i>Falco subbuteo</i>	Hobby	الشويهين (البندق)
<i>Falco biarmicus</i>	Lanner Falcon	الصقر الحر
<i>Falco pelegrinoides</i>	Barbary Falcon	الشاهين المغربي

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Alectoris chukar</i>	Chukar	الشنار (السفرج)
<i>Ammoperdix heyi</i>	Sand Partridge	جمل الرمال
<i>Francolinus francolinus</i>	Black Francolin	الحجل الأسود الدراج
<i>Francolinus pondicerianus</i>	Grey Francolin	الدراج الرمادي
<i>Coturnix coturnix</i>	Quail	الفر (السمن)
<i>Rallus aquaticus</i>	Water Rail	مرعة الماء
<i>Porzana porzana</i>	Spotted Crake	المرعة الرقطار (المنقطة)
<i>Porzana parva</i>	Little Crake	المرعة الصغيرة
<i>Porzana pusilla</i>	Baillon's Crake	مرعة بيولن
<i>Porphyrio porphyrio</i>	Purple Gallinule	فرفر (سمنون) أرجواني
<i>Fulica atra</i>	Coot	الغرة
<i>Fulica cristata</i>	Red-knobbed Coot	الغرة المتوجة
<i>Grus grus</i>	Common Crane	الكركي الرمادي
<i>Haematopus ostralegus</i>	Oystercatcher	أكل المحار
<i>Recurvirostra avosetta</i>	Avocet	النكات
<i>Burhinus oedicnemus</i>	Stone Curlew	الكروان الجبلي

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Glareola pratincola</i>	Collared Pratincole	أبو اليسر المطوق
<i>Glareola maldivarum</i>	Oriental Pratincole	أبو اليسر الشرقي
<i>Glareola nordmanni</i>	Black-winged Pratincole	أبو اليسر أسود الجناح
<i>Glareola lactea</i>	Little Pratincole	أبو اليسر الصغير
<i>Charadrius dubius</i>	Little Ringed Plover	الزقراق المطوق الصغير
<i>Charadrius hiaticula</i>	Ringed Plover	الزقراق المطوق
<i>Charadrius pecuarius</i>	Kittlitz's Plover	زقراق كينليتز
<i>Charadrius mongolus</i>	Lesser Sand Plover	زقراق الرمل الصغير
<i>Charadrius leschenaultii</i>	Greater Sand Plover	زقراق الرمل الكبير
<i>Charadrius asiaticus</i>	Caspian Plover	الزقراق القزويني
<i>Eudromias morinellus</i>	Dotterel	الزقراق الأغبر
<i>Pluvialis fulva</i>	Pacific Golden Plover	القطاط الذهبي الباسيفيكي
<i>Pluvialis apricaria</i>	Golden Plover	القطاط الذهبي
<i>Pluvialis squatarola</i>	Grey Plover	القطاط الرمادي
<i>Vanellus leucurus</i>	White-tailed Plover	القطاق أبيض الذيل
<i>Vanellus vanellus</i>	Lapwing	الزقراق الشامي
<i>Calidris tenuirostris</i>	Great Knot	الدريجة الكبيرة

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Calidris canutus</i>	Red Knot	الدريجة الحمراء (النط)
<i>Calidris alba</i>	Sanderling	المدروان
<i>Calidris ruficollis</i>	Red-necked Stint	الدريجة حمراء الرقبة
<i>Calidris minuta</i>	Little Stint	الدريجة الصغيرة
<i>Calidris temminckii</i>	Temminck's Stint	دريجة تمنيك
<i>Calidris subminuta</i>	Long toed Stint	الدريجة طويلة الأصابع
<i>Calidris ferruginea</i>	Curlew Sandpiper	الطيوطي مقوس المنقار
<i>Calidris alpina</i>	Dunlin	الدريجة
<i>Philomachus pugnax</i>	Ruff	الحجولة
<i>Lymnocyrtus minimus</i>	Jack Snipe	الشنقب (الجهلول) الصغير
<i>Gallinago gallinago</i>	Snipe	الشنقب
<i>Gallinago stenura</i>	Pintail Snipe	الشنقب رفيع الذيل
<i>Scolopax rusticola</i>	Woodcock	ديك الغابة
<i>Limosa limosa</i>	Black-tailed Godwit	بقويقة سوداء الذيل
<i>Limosa lapponica</i>	Bar-tailed Godwit	بقويقة مخططة الذيل
<i>Numenius phaeopus</i>	Whimbrel	كروان الماء الصغير
<i>Numenius arquata</i>	Curlew	كروان الماء

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Tringa erythropus</i>	Spotted Redshank	الطيوطي أحمر الساق المرقط
<i>Tringa totanus</i>	Redshank	الطيوطي أحمر الساق
<i>Tringa stagnatilis</i>	Marsh Sandpiper	طيوطي البطائح
<i>Tringa nebularia</i>	Greenshank	طيوطي أخضر الساق
<i>Tringa ochropus</i>	Green Sandpiper	الطيوطي الأخضر
<i>Tringa glareola</i>	Wood Sandpiper	طيوطي الغياض
<i>Tringa cinerea</i>	Terek Sandpiper	طيوطي مغبر
<i>Tringa hypoleucos</i>	Common Sandpiper	الطيوطي الشائع
<i>Arenaria interpres</i>	Turnstone	قنبرة الماء
<i>Phalaropus lobatus</i>	Red-necked Phalarope	الفلروب أحمر الرقبة
<i>Phalaropus fulicarius</i>	Grey Phalarope	الفلروب الرمادي
<i>Stercorarius pomarinus</i>	Pomarine Skua	كركر بوماريني
<i>Stercorarius parasiticus</i>	Arctic Skua	الكركر القطبي
<i>Stercorarius longicaudus</i>	Long-tailed Skua	الكركر طويل الذنب
<i>Larus leucophthalmus</i>	White-eyed Gull	النورس أبيض العين
<i>Larus ichthyæetus</i>	Great Black-headed Gull	نورس السمك

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Larus genei</i>	Slender-billed Gull	النورس اسطواني المنقار
<i>Sterna caspia</i>	Caspian Tern	خطاف البحر القزويني
<i>Sterna sandvicensis</i>	Sandwich Tern	خطاف البحر ساندويش
<i>Sterna albifrons</i>	Little Tern	خطاف البحر الصغير
<i>Chlidonias leucopterus</i>	White-winged Black Tern	خطاف المستنقعات أبيض الجناح
<i>Tyto alba</i>	Barn Owl	بومة المخازن البيضاء
<i>Otus brucei</i>	Striated Scops Owl	بومة الأشجار المخططة
<i>Otus scops</i>	Scops Owl	بومة الأشجار الأوروبية
<i>Athene noctua</i>	Little Owl	البومة الصغيرة
<i>Asio otus</i>	Long-eared Owl	البومة القراء
<i>Asio flammeus</i>	Short-eared Owl	البومة الصمعاء
<i>Caprimulgus mahrattensis</i>	Syke's Nightjar	سبد السيخ
<i>Caprimulgus europaeus</i>	European Nightjar	السبد الأوروبي
<i>Caprimulgus aegyptius</i>	Egyptian Nightjar	السبد المصري
<i>Calandrella rufescens</i>	Lesser Short-toed Lark	القبرة قصيرة الأصابع الصغيرة

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Pycnonotus xanthopygos</i>	Yellow-vented Bulbul	بلبل أصفر العجز
<i>Hypocolius ampelinus</i>	Grey Hypocolius	الخناق الرمادي
<i>Irania gutturalis</i>	White-throated Robin	أبو الحناء أبيض الزور
<i>Oenanthe finschii</i>	Finsch's Wheatear	أبلق فينتش
<i>Oenanthe xanthoprymna</i>	Red-tailed Wheatear	الأبلق أحمر الذيل
<i>Oenanthe picata</i>	Eastern Pied Wheatear	أبلق أحمر شرقي
<i>Oenanthe monacha</i>	Hooded Wheatear	الأبلق أبو قلنسوة
<i>Oenanthe alboniger</i>	Hume's Wheatear	أبلق هيوم
<i>Hippolais languida</i>	Upcher's Warbler	هازجة الشجر
<i>Sylvia mystacea</i>	Menetries' Warbler	الهازجة الرؤساء
<i>Sylvia minula</i>	Desert Lesser Whitethroat	دخلة الصحراء بيضاء الزور الصغرى
<i>Sylvia althaea</i>	Hume's Lesser Whitethroat	دخلة هيوم بيضاء الزور الصغرى
<i>Phylloscopus schwarzi</i>	Radde's Warbler	نقشارة رادي
<i>Phylloscopus neglectus</i>	Plain Leaf Warbler	نقشارة الورق
<i>Puffinus persicus</i>	Persian Shearwater	جلم الماء الفارسي
<i>Phaethon aethereus</i>	Red-billed Tropicbird	الطائر الإستوائي أحمر

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
		المنقار
<i>Phalacrocorax nigrogularis</i>	Socotra Cormorant	غراب البحر السوقطري
<i>Pelecanus onocrotalus</i>	White Pelican	البعج الأبيض
<i>Anser erythropus</i>	Lesser White-fronted Goose	الاوزة الغراء الصغيرة
<i>Anas querquedula</i>	Ferruginous Duck	الحذف الصيفي
<i>Marmaronetta angustirostris</i>	Marbled Teal	شرشير مخطط
<i>Aythya nyroca</i>	Ferruginous Duck	حماروي أبيض العين
<i>Pernis apivorus</i>	European Honey Buzzard	حوام النحل الأوروبي
<i>Anthropoides virgo</i>	Demoiselle Crane	الرهو
<i>Himantopus himantopus</i>	Black winged Stilt	أبو المغازل
<i>Dromas ardeola</i>	Crab Plover	الحنكور
<i>Charadrius alexandrinus</i>	Kentish Plover	الزقراق الاسكندري
<i>Vanellus gregarius</i>	Sociable Plover	الزقراق الاجتماعي (قطقات)
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	الطيوطي عريض المنقار

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Gallinago media</i>	Great Snipe	الشنقب الكبير (جهلول)
<i>Larus hemprichii</i>	Sooty Gull	النورس الفاحم
<i>Sterna bergii</i>	Crested Tern	خطاف البحر المتوج
<i>Sterna bengalensis</i>	Lesser Crested Tern	خطاف البحر المتوج الصغير
<i>Sterna repressa</i>	White-cheeked Tern	خطاف البحر أبيض الخد
<i>Sterna anaethetus</i>	Bridled Tern	خطاف البحر الأسمر
<i>Sterna saundersi</i>	Saunders' Little Tern	خطاف البحر سوندرز
<i>Halcyon chloris</i>	White-collared Kingfisher	صياد السمك (الرفراف)
<i>Coracias garrulus</i>	European Roller	غراب الزيتون الأوروبي
<i>Hippolais caligata</i>	Booted Warbler	الهازجة المنتعلة
<i>Ficedula semitorquata</i>	Semi-collared Flycatcher	خطاف الذباب شبه المطوق
<i>Turdoides squamiceps</i>	Arabian Babbler	الثرثرة العربية
<i>Carospiza brachydactyla</i>	Pale Rock Sparrow	عصفور الصخر الباهت
<i>Emberiza cineracea</i>	Cinereous Bunting	الدرسة الرمادية
<i>Crex crex</i>	Corn Crake	مرعة الغيط (صفرد)

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Pelecanus crispus</i>	Dalmatian Pelican	بجع الدلماتيا الأشعث
<i>Phoenicopterus ruber</i>	Greater Flamingo	النحام الكبير (البشروش)
<i>Phoenicopterus ruber</i>	Lesser Flamingo	النحام الصغير
<i>Neophron percnopterus</i>	Egyptian Vulture	الرخمة المصرية
<i>Torgos tracheliotus</i>	Lappet faced Vulture	النسر الأوزن
<i>Circus macrourus</i>	Pallid Harrier	المرزة الباهتة (البغناء)
<i>Aquila clanga</i>	Greater Spotted Eagle	العقاب الأسفع (أرقط) كبير
<i>Aquila heliaca</i>	Imperial Eagle	ملك العقبان
<i>Pandion haliaetus</i>	Osprey	عقاب نساري (عقاب السمك)
<i>Falco naumanni</i>	Lesser Kestrel	العويسق
<i>Falco concolor</i>	Sooty Falcon	صقر الغروب
<i>Bubo bubo (ascalaphus)</i>	Desert Eagle Owl	البومة النسارية (بوهة)
(Reptiles) الزواحف		
<i>Uromastyx aegyptia</i>	Spiny-tailed Lizard	الضب
<i>Varanus griseus</i>	Desert Monitor	الورل

القائمة الثالثة

Appendix III

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
الحيوانات الثديية (Mammals)		
<i>Suncus etruscus</i>	Savi's Pigmy Shrew	زبابة سافيز
<i>Rousettus aegyptiacus</i>	Egyptian Fruit Bat	خفاش الفاكهة
<i>Rhinopoma muscatellum</i>	Muscat Mouse-tailed Bat	خفاش مسقط فأري الذنب
<i>Triaenops Persicus</i>	Persian Leaf-nosed Bat	خفاش ورقي الأنف الفارسي
<i>Jaculus jaculus</i>	Lesser Jerboa	الجربوع
<i>Acomys cahirinus</i>	Egyptian Spiny Mouse	الفأر المصري الشوكي
<i>Meriones arimalius</i>	Arabian Jird	الجرذ العربي
الطيور (Birds)		
<i>Tachybaptus ruficollis</i>	Little Grebe	غطاس صغير
<i>Ardeola grayii</i>	Indian Pond Heron	بلشون البرك الهندي
<i>Bubulcus ibis</i>	Cattle Egret	بلشون البقر أبو قردان
<i>Egretta garzetta</i>	Little Egret	البلشون الأبيض الصغير
<i>Egretta intermedia</i>	Intermediate Egret	البلشون المتوسط
<i>Alopochen aegyptiacus</i>	Egyptian Goose	اوزة مصرية
<i>Nettapus coromandelianus</i>	Cotton Teal	حذف القطن

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Amuarornis phoenicurus</i>	White-breasted Waterhen	دجاجة الماء بيضاء الصدر
<i>Gallinula chloropus</i>	Moorhen	دجاجة الماء
<i>Vanellus indicus</i>	Red-wattled Lapwing	الزقراق المحمر
<i>Calidris melanotos</i>	Pectoral Sandpiper	الدريجة سوداء الظهر
<i>Larus melanocephalus</i>	Mediterranean Gull	نورس البحر الأبيض المتوسط
<i>Larus minutus</i>	Little Gull	النورس الصغير
<i>Xema sabini</i>	Sabine's Gull	نورس سابيني
<i>Larus ridibundus</i>	Black-headed Gull	النورس أسود الرأس
<i>Larus brunnicephalus</i>	Brown-headed Gull	النورس بني الرأس
<i>Larus canus</i>	Common Gull	النورس الشائع
<i>Larus fuscus</i>	Lesser Black-backed (Baltic) Gull	النورس أسود الظهر الصغير
<i>Larus heuglini</i>	Siberian Gull	النورس السيبيري
<i>Larus cachinnans</i>	Caspian Gull	النورس القزويني
<i>Rissa tridactyla</i>	Black-legged Kittiwake (Kittiwake)	
<i>Gelochelidon nilotica</i>	Gull-billed Tern	خطاف البحر النيلي (الأويق)
<i>Sterna dougallii</i>	Roseate tern	خطاف البحر الوردي
<i>Sterna hirundo</i>	Common Tern	خطاف البحر الشائع
<i>Sterna paradisea</i>	Arctic Tern	خطاف البحر القطبي
<i>Sterna fuscata</i>	Sooty Tern	خطاف البحر الفاحم

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Chlidonias hybridus</i>	Whiskered Tern	خطاف المستنقعات الملتحي
<i>Chlidonias niger</i>	Black Tern	خطاف المستنقعات الأسود
<i>Anous tenuirostris</i>	Lesser Noddy	الأبله الصغير
<i>Anous stolidus</i>	Common Noddy	الأبله الشائع
<i>Pterocles lichtensteinii</i>	Lichtenstein's Sandgrouse	القطا المخطط
<i>Pterocles senegallus</i>	Spotted Sandgrouse	القطا المرقط
<i>Pterocles orientalis</i>	Black-bellied Sandgrouse	القطا أسود البطن
<i>Columba oenas</i>	Stock Dove	حمام بري
<i>Columba livia</i>	Rock Dove	الحمام الجبلي
<i>Columba palumbus</i>	Woodpigeon	حمام الغابات
<i>Streptopelia decaocto</i>	Collared Dove	الحمام المطوق
<i>Streptopelia turtur</i>	Turtle Dove	القمرى
<i>Streptopelia orientalis</i>	Oriental Turtle Dove	القمرى الشرقى
<i>Streptopelia senegalensis</i>	Laughing Dove	حمام النخيل (الضاحك)
<i>Oena capensis</i>	Namaqua Dove	يمام طويل الذنب
<i>Psittacula krameri</i>	Ring-necked Parakeet	الببغاء الهندية الطوق
<i>Psittacula eupatria</i>	Alexandrine Parakeet	الببغاء النيلية
<i>Cuculus canorus</i>	Cuckoo	الوقواق الشائع (البقو)
<i>Eudynamys scolopacea</i>	Indian Koel	كول

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Apus apus</i>	Common Swift	السمامة الشائعة
<i>Apus pallidus</i>	Pallid Swift	السمامة الباهتة
<i>Apus melba</i>	Alpine Swift	سمامة الصرور
<i>Apus pacificus</i>	Pacific Swift	سمامة البلسيفيك
<i>Apus affinis</i>	Little Swift	السمامة الصغيرة
<i>Halcyon smyrnensis</i>	White-breasted Kingfisher	صياد السمك أبيض الصدر
<i>Halcyon leucocephala</i>	Grey-headed Kingfisher	صياد السمك رمادي الرأس
<i>Alcedo atthis</i>	Kingfisher	صياد السمك الشائع
<i>Ceryle rudis</i>	Pied Kingfisher	صياد السمك الأبقع
<i>Merops albicollis</i>	White-throated Bee-eater	الوروار أبيض الزور
<i>Merops orientalis</i>	Little Green Bee eater	الوروار الشرقي الصغير
<i>Merops persicus</i>	Blue cheeked Bee eater	الوروار العراقي أزرق الخد
<i>Merops apiaster</i>	European Bee eater	الوروار الأوروبي
<i>Coracias benghalensis</i>	Indian Roller	غراب الزيتون الهندي
<i>Upupa epops</i>	Hoopoe	الهدهد
<i>Jynx torquilla</i>	Wryneck	اللواء
<i>Eremopterix nigriceps</i>	Black-crowned Finch Lark	القبرة سوداء الرأس
<i>Eremalauda dunni</i>	Dunn's Lark	قبرة الرمال
<i>Ammomanes cincturus</i>	Bar-Tailed Desert Lark	قبرة الصحراء موشحة الذنب

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Ammomanes deserti</i>	Desert Lark	قبرة الصحراء
<i>Alaemon alaudipes</i>	Hoopoe Lark	القبرة الهددية
<i>Melanocorypha calandra</i>	Calandra Lark	القبرة الشرقية الكبيرة
<i>Melanocorypha bimaculata</i>	Bimaculated Lark	القبرة الشرقية المرقطه الصغيرة
<i>Calandrella brachydactyla</i>	Short-toed lark	القبرة قصيرة الأصابع
<i>Galerida cristata</i>	Crested Lark	القبرة المتوجة
<i>Alauda gulgula</i>	Oriental Skylark	قبرة السماء الصغيرة الشرقية
<i>Alauda arvensis</i>	Skylark	قبرة السماء
<i>Eremophila bilopha</i>	Temminck's Horned Lark	القبرة المقرنة
<i>Riparia paludicola</i>	Brown-throated Martin	خطاف الشواطئ بني الرقبة
<i>Riparia riparia</i>	Sand Martin	خطاف الشواطئ
<i>Riparia diluta</i>	Pale Martin	الخطاف الباهت
<i>Ptyonoprogne fuligula</i>	African Rock Martin	خطاف الصخور الافريقي
<i>Hirundo obsoleta</i>	Pale Crag Martin	خطاف الشواهد الباهت
<i>Hirundo rupestris</i>	Crag Martin	خطاف الشواهد
<i>Hirundo rustica</i>	Barn Swallow	السنونو
<i>Hirundo smithii</i>	Wire-tailed Swallow	السنونو سلكي الذنب
<i>Hirundo daurica</i>	Red-rumped Swallow	السنونو أحمر العجز
<i>Petrochelidon fluvicola</i>	Indian Cliff swallow	سنونو الصخور الهندي

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Delichon urbica</i>	House Martin	خطاف الضواحي
<i>Delichon dasypus</i>	Asiatic House Martin	خطاف الضواحي الآسيوي
<i>Anthus richardi</i>	Richard's Pipit	جشنة (أبو تمر) الآسيوي
<i>Anthus godlewskii</i>	Blyth's Pipit	جشنة بلايت
<i>Anthus campestris</i>	Tawny Pipit	جشنة الصحراء
<i>Anthus similis</i>	Long-billed Pipit	الجشنة طويلة المنقار
<i>Anthus hodgsoni</i>	Olive-backed Pipit	جشنة زيتونية الظهر
<i>Anthus trivialis</i>	Tree Pipit	جشنة الشجر
<i>Anthus pratensis</i>	Meadow Pipit	جشنة الغيط
<i>Anthus cervinus</i>	Red-throated Pipit	جشنة حمراء الزور
<i>Anthus rubescens</i>	Buff bellied Pipit	جشنة مصفرة البطن
<i>Anthus spinoletta</i>	Water Pipit	جشنة الماء
<i>Dendronanthus indicus</i>	Forest Wagtail	ذعرة الغابات
<i>Motacilla flava</i>	Yellow Wagtail	الذعرة الصفراء
<i>Motacilla (f.) feldegg</i>	Black-headed Wagtail	ذعرة سوداء الرأس
<i>Motacilla citreola</i>	Citrine Wagtail	ذعرة صفراء الرأس
<i>Motacilla cinerea</i>	Grey Wagtail	الذعرة الرمادية
<i>Motacilla alba</i>	White Wagtail	الذعرة البيضاء
<i>Motacilla (a) personata</i>	Masked Wagtail	الذعرة المقنعة

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Pycnonotus leucogenys</i>	White-cheeked Bulbul	بلبل أبيض الخد
<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	بلبل أحمر الوجنة
<i>Pycnonotus cafer</i>	Red-vented Bulbul	بلبل أحمر اتلعجز
<i>Cercotrichas galactotes</i>	Rufous Bush Robin	أبو الحناء الأحمر
<i>Cercotrichas podobe</i>	Black Bush Robin	أبو الحناء الأسود
<i>Erithacus rubecula</i>	Robin	أبو الحناء
<i>Luscinia luscinia</i>	Thrush Nightingale	العندليب
<i>Luscinia megarhynchos</i>	Nightingale	الهزاز الأوروبي
<i>Luscinia svecica</i>	Bluethroat	الهزاز أزرق الزور
<i>Phoenicurus erythronotus</i>	Eversmann's Redstart	حميراء ايفرسمان
<i>Phoenicurus ochruros</i>	Black Redstart	الحميراء السوداء
<i>Phoenicurus phoenicurus</i>	Redstart	الحميراء
<i>Phoenicurus phoenicurus samamisisicus</i>	Ehrenberg's Redstart	حميراء ار مبيرج
<i>Cercomela melanura</i>	Blackstart	القليعي أسود الذنب
<i>Saxicola rubetra</i>	Whinchat	القليعي
<i>Saxicola torquata</i>	Stonechat	القليعي المطوق (محاكي الصخور)
<i>Saxicola torquata maura</i>	Siberian Stonechat	القليعي المطوق السيبيري
<i>Saxicola caprata</i>	Pied Stonechat	القليعي الأبقع

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Oenanthe isabellina</i>	Isabelline Wheatear	الأبلق الأشهب
<i>Oenanthe oenanthe</i>	Northern Wheatear	الأبلق الأوروبي
<i>Oenanthe pleschanka</i>	Pied Wheatear	الأبلق الأبقع
<i>Oenanthe hispanica</i>	Black-eared Wheatear	الأبلق أسود الأذن
<i>Oenanthe deserti</i>	Desert Wheatear	أبلق البادية (الصحراء)
<i>Oenanthe lugens</i>	Mourning Wheatear	الأبلق الحزين
<i>Oenanthe leucopyga</i>	White-crowned Black Wheatear	الأبلق الأسود أبيض القنة
<i>Monticola saxatilis</i>	Rock Thrush	سمنة الصخور
<i>Monticola solitarius</i>	Blue Rock Thrush	سمنة الصخور الزرقاء
<i>Turdus torquatus</i>	Ring Ouzel	الدج المطوق
<i>Turdus merula</i>	Blackbird	الشحرور
<i>Turdus obscurus</i>	Eye-browed Thrush	السمنة الحاجبية
<i>Turdus naumanni</i>	Dusky Thrush	السمنة القاتمة
<i>Turdus ruficollis</i>	Black-throated Thrush	السمنة سوداء الرقبة
<i>Turdus pilaris</i>	Fieldfare	سمنة الحقول
<i>Turdus philomelos</i>	Song Thrush	السمنة المغردة
<i>Turdus iliacus</i>	Redwing	السمنة حمراء الجناحين
<i>Turdus viscivorus</i>	Mistle Thrush	سمنة الدبق
<i>Cettia cetti</i>	Cetti's Warbler	هازجة سيتيز

الاسم العلمي	الاسم الانجليزي	الاسم العربي / المحلي
Scientific Name	Common Name	Arabic Name
<i>Prinia gracilis</i>	Graceful Warbler	الهازجة الرشيقة
<i>Scotocerca inquieta</i>	Scrub Warbler	نمنمة الشجر (هازجة الشجيرات)
<i>Locustella naevia</i>	Grasshopper Warbler	هازجة الجندب
<i>Locustella fluviatilis</i>	River Warbler	هازجة النهر
<i>Locustella luscinioides</i>	Savi's Warbler	هازجة سافيز
<i>Acrocephalus melanopogon</i>	Moustached Warbler	هازجة سواد اللحية (الشنب)
<i>Acrocephalus schoenobaenus</i>	Sedge Warbler	هازجة السعد
<i>Acrocephalus agricola</i>	Paddyfield Warbler	هازجة الأرز
<i>Acrocephalus dumetorum</i>	Blyth's Reed Warbler	هازجة القصب بلايث
<i>Acrocephalus palustris</i>	Marsh Warbler	هازجة البطائح
<i>Acrocephalus scirpaceus fuscus</i>	Eastern Reed Warbler	هازجة القصب الشرقية
<i>Acrocephalus stentoreus</i>	Clamorous Reed Warbler	هازجة القصب الصياحة
<i>Acrocephalus arundinaceus</i>	Great Reed Warbler	هازجة القصب الكبرى
<i>Hippolais pallida</i>	Olivaceous Warbler	الهازجة الزيتونية
<i>Hippolais rama</i>	Syke's Warbler	هازجة سايكيز
<i>Hippolais icterina</i>	Icterine Warbler	الهازجة الليمونية
<i>Sylvia nana</i>	Desert Warbler	هازجة الصحراء
<i>Sylvia hortensis</i>	Orphean Warbler	هازجة الحدائق
<i>Sylvia nisoria</i>	Barred Warbler	الهازجة الموشحة

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Sylvia curruca</i>	Lesser Whitethroat	الخلة بيضاء الزور الصغرى
<i>Sylvia communis</i>	Whitethroat	الدخلة بيضاء الزور
<i>Sylvia borin</i>	Garden Warbler	هازجة البساتين
<i>Sylvia atricapilla</i>	Blackcap	أبو قلنسوة (عصفور التين)
<i>Phylloscopus nitidus</i>	Green Warbler	النقشارة الخضراء
<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	النقشارة صفراء الحاجب
<i>Phylloscopus humei</i>	Hume's Warbler	نقشارة هيومنز
<i>Phylloscopus fuscatus</i>	Dusky Warbler	النقشارة القاتمة
<i>Phylloscopus bonelli</i>	Bonelli's Warbler	نقشارة بونيللي
<i>Phylloscopus sibilatrix</i>	Wood Warbler	نقشارة الغاب
<i>Phylloscopus collybita</i>	Chiffchaff	نقشارة
<i>Phylloscopus trochilus</i>	Willow Warbler	نقشارة الصفصاف
<i>Muscicapa cyanomelana</i>	Blue & White Flycatcher	خطاف الذباب المزرقي
<i>Muscicapa striata</i>	Spotted Flycatcher	خطاف الذباب المرقط
<i>Ficedula parva</i>	Red-breasted Flycatcher	خطاف الذباب أحمر الصدر
<i>Ficedula hypoleuca</i>	Pied Flycatcher	خطاف الذباب الأبقع
<i>Nectarinia asiatica</i>	Purple Sunbird	عصفور الشمس الارجواني
<i>Oriolus oriolus</i>	Golden Oriole	عصفور التوت (الصفير الذهبي)
<i>Lanius isabellinus</i>	Isabelline Shrike	صرد محمر الذنب

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Lanius collurio</i>	Red-backed Shrike	صرد أحمر الظهر
<i>lanius vittatus</i>	Bay-backed Shrike	صرد كستنائي الظهر
<i>Lanius schach</i>	Long-tailed Shrike	صرد طويل الذنب
<i>Lanius minor</i>	Lesser Grey Shrike	الصرد الرمادي الصغير
<i>Lanius meridionalis</i>	Southern Grey Shrike	الصرد الرمادي الكبير
<i>Lanius pallidirostris</i>	Steppe Grey Shrike	الصرد الرمادي السهلي
<i>Lanius senator</i>	Woodchat Shrike	الصرد أحمر القنة
<i>Lanius nubicus</i>	Masked Shrike	الصرد المقنع
<i>Dicrurus adsimilis</i>	Black Drongo	الدرونجو الأسود
<i>Corvus splendens</i>	House Crow	الغراب الدوري
<i>Corvus macrorhynchus</i>	Large-billed Crow	الغراب طويل المنقار (غراب الغاب)
<i>Corvus ruficollis</i>	Brown-necked Raven	الغراب بني الرقبة
<i>Cinnyricinclus leucogaster</i>	Amethyst Starling	الزرزور أبيض البطن
<i>Sturnus vulgaris</i>	Starling	الزرزور
<i>Sturnus roseus</i>	Rose-coloured Starling	الزرزور الوردي
<i>Creatophora cineracea</i>	Wattled Starling	الزرزور الرمادي (أبو لغد)
<i>Sturnus contra</i>	Pied Mynah	مينة مبفعة
<i>Acridotheres tristis</i>	Common Mynah	امينة الشائعة
<i>Sturnus pagodarum</i>	Brahminy Mynah	مينة براهميني

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Acridotheres ginginianus</i>	Bank Mynah	مينة الضفاف
<i>Passer domesticus</i>	House Sparrow	العصفور الدوري
<i>Passer hispaniolensis</i>	Spanish Sparrow	العصفور الاسباني
<i>Passer montanus</i>	Tree Sparrow	عصفور الشجر
<i>Petronia xanthocollis</i>	Yellow-throated Sparrow	العصفور أسود الرقبة
<i>Lonchura malabarica</i>	Indian Silverbill	فضي المنقار الهندي
<i>Fringilla coelebs</i>	Chaffinch	العصفور الظالم
<i>Fringilla montifringilla</i>	Brambling	الشرشور الجبلي
<i>Carduelis carduelis</i>	Goldfinch	الحسون
<i>Carduelis spinus</i>	Siskin	حسون الشوك
<i>Carduelis cannabina</i>	Linnet	حسون التفاح
<i>Rhodopechys githaginea</i>	Trumpeter Finch	الزمير الوردي
<i>Carpodacus erythrinus</i>	Common Rosefinch	العصفور الوردي الشائع
<i>Emberiza leucocephalos</i>	Pine Bunting	درسة الصنوبر
<i>Emberiza citrinella</i>	Yellowhammer	الدرسة الأوروبية الصفراء
<i>Emberiza stewarti</i>	White-capped Bunting	درسة بيضاء القنة
<i>Emberiza striolata</i>	House Bunting	الدرسة المنزلية
<i>Emberiza hortulana</i>	Ortolan Bunting	درسة الشعير
<i>Emberiza rustica</i>	Rustic Bunting	درسة الريف

الاسم العلمي	الاسم الانجليزي	الاسم العربي/ المحلي
Scientific Name	Common Name	Arabic Name
<i>Emberiza pusilla</i>	Little Bunting	الدرسة الصغيرة
<i>Emberiza aureola</i>	Yellow breasted Bunting	الدرسة صفراء البطن
<i>Emberiza schoeniclus</i>	Reed Bunting	درسة القصب
<i>Emberiza bruniceps</i>	Red headed Bunting	درسة حمراء الرأس
<i>Emberiza melanocephala</i>	Black headed Bunting	درسة سوداء الرأس
<i>Miliaria calandra</i>	Corn Bunting	درسة القمح الشائعة
الزواحف (Reptiles)		
<i>Pristutrus rupestris</i>	Common Semaphore Gecko	أبو بريص
<i>Stenodactylus slevini</i>	Slevin's Big-headed Gecko	أبو بريص