



### Our Vision

Creating an excellent city that provides the essence and success and comfort of living.

### Our Mission

Working to plan, design, build and manage the municipal infrastructure and other related facilities and services through the appropriate investment in our human and other resources.



WWF's mission is to stop the degradation of the planet's natural environment and build a future in which humans live in harmony with nature, by:

- 1 conserving the world's biological diversity
- 1 ensuring that the use of renewable natural resources is sustainable
- 1 promoting the reduction of pollution and wasteful consumption.



We acknowledge the generous support of National Bank of Dubai

# Ras Al Khor Wildlife Sanctuary



## FOREWORD

Ras Al Khor Wildlife Sanctuary (RAKWS) has appeared as a central attraction for the birdwatchers in UAE. People other than birdwatchers are also expressing their interest in visiting the sanctuary for its aesthetic value. Birds are very visible and appear in a spectacular form. Besides their role in the ecological balance, they are also a source of joy and recreation. Just in the heart of Dubai city, this natural heritage is a proud symbol of Dubai. The Environment Department of Dubai Municipality is happy to provide citizens and guests access to this unique bird world. The Environment Department has constructed three hides/towers in RAKWS for visitors to have a closer view of birds and other wildlife. Moreover, it has been a long felt need for the visitors of RAKWS to have a publication on the basic facts of the Sanctuary.

Hence, this publication will act as an important communication tool for making people aware of the biodiversity of RAKWS. I hope it will also fulfill the information needs of the visitors.

Furthermore, this will encourage people to learn more about the importance of Dubai's vulnerable wildlife and their habitat. Finally, I believe this pictorial booklet will inspire people to help protect the wildlife of Dubai.

I am happy to express my thanks to the diligent staff of EWS/WWF- UAE, especially Dr. Frederic Launay, Ms. Lisa Perry, Ms. Rashmi De Roy, Mr. Shahbaz Ahmed and Mr. Nick Crawley for their untiring effort in bringing out this publication.

I am particularly grateful to the National Bank of Dubai for its financial support and cooperation in this nature conservation programme.

I am thankful to all colleagues for their generosity and genuine helpful spirit.

Hamdan Al Shaer  
Director Environment Department  
Dubai Municipality



## Environmental Message

National Bank of Dubai, the oldest locally incorporated bank, recently joined efforts with Dubai Municipality and WWF in order to raise awareness of the UAE residents and tourists on the Ras Al Khor area as a protected nature reserve.

With the first phase of the Ras Al Khor project already completed, the National Bank of Dubai, through its sponsorship, has reflected its ongoing commitment towards preserving the nation's natural resources and its environment. NBD continues to stand at the forefront of corporate social responsibility, proudly sustaining the age-old heritage of the United Arab Emirates.

Reflecting over 40 years of strong presence throughout the UAE, the National Bank of Dubai is dedicated to supporting a range of community related activities and causes. NBD's efforts towards preserving the nation's wildlife sanctuaries reflect the Bank's ongoing support of environmental protection for future generations.





# Ras Al Khor Wildlife Sanctuary

Dubai UAE







## Introduction

**Ras Al Khor Wildlife Sanctuary (RAKWS)** is one of the few urban protected areas in the world. This sanctuary, located at the very end of Dubai creek, is a coastal wetland of global importance. Covering a 6.2 sq km-area surrounded by a buffer zone, the Sanctuary holds approximately 266 species of fauna and 47 species of flora. The existence of various ecosystems within RAKWS - mangroves, mudflats, lagoons, sabkhas, reed beds and shrub lands - contributes to rich biological diversity, as the systems support a variety of plants, insects, reptiles, birds and

mammals. The majestic flamingos, against a background of lush green mangroves, are the most visible and attractive natural features of RAKWS.

The Sanctuary is of considerable ecological, educational, cultural and aesthetic importance. It is more than just about protecting wild animals. It is about preserving natural ecosystems of the region and maintaining the integrity of its natural environment. RAKWS is also identified as a Globally Important Bird Area (IBA) by BirdLife International.

## Legal Status

**His Highness the Ruler** of Dubai has promulgated Law No. 11 of 2003 for the 'Establishment of Protected Areas in the Emirate of Dubai.' RAKWS was established in 1985 and was officially declared as a protected area on March 1, 1998 by Local Order No. (2) of 1998.

Territorial jurisdiction of the wetland lies under the Government of Dubai. Dubai Municipality is vested with the responsibility of ensuring the protection of natural habitats and biodiversity of terrestrial as well as coastal and marine environments for the Emirate of Dubai. The functional jurisdiction is under the Environment Department (Marine Environment and Sanctuaries Unit) of Dubai Municipality.







## Management

The Marine Environment and Sanctuaries Unit of the Environment Department under Dubai Municipality is the official management authority of the Sanctuary vide Law No.11 of 2003.

### The specific role of Dubai Municipality in environmental conservation is to:

- 1 prepare conservation plans and legislation
- 1 conduct research and studies
- 1 conserve and restore the biodiversity of the Emirate of Dubai
- 1 ensure the protection of plants and animal stocks of actual or potential value to mankind
- 1 help the preservation of species and ecological processes that underlie rural productivity and the restoration of ecosystems degraded by unwise land use
- 1 ensure protection of conservation areas in accordance with Law No. 11 of 2003 on protected areas
- 1 enforce laws on the violators

### The main objectives of the RAKWS management are to:

- 1 conserve and improve the biological diversity of coastal and terrestrial ecosystems typical of the intertidal area along the shores of Ras Al Khor
- 1 maintain the essential ecological processes within these systems
- 1 manage their renewable resources sustainably
- 1 undertake studies and research to generate data for better management of the Sanctuary
- 1 protect and restore the faunal and floral diversity, as well as natural abundance of individual species through habitat conservation, management and restoration
- 1 educate the community about natural heritage, general principles of conservation, and the sustainable use of biological resources
- 1 develop and implement an ecotourism programme in the wilderness area

At present the site is getting full protection from the government. Vide Local Law No. 11 of 2003 the site enjoys standard protected area management provisions including a ban on hunting, shooting and disturbing wildlife within the area. An indicative management plan has been developed, and is being implemented by the Environment Department. The boundary of the site, with provision for both core and buffer zones, has been demarcated while the outer boundary of the sanctuary is fenced.

Ramsar status of the site is being proposed for the conservation of waterfowl. This implies promotion of appropriate research and monitoring, as also provision and regulation of education and interpretation activities based on the natural environment.

Effective partnership building for collaborative activities e.g. the signing of MOU with that of EWS and WWF-UAE.

The Central Veterinary Research Laboratory is conducting research on the improvement of the breeding facilities for Flamingoes.

Flamingos







Dubai Municipality has its own research activities like inventory building of biodiversity, birds migration and breeding, assessment of biomass of selected species and mangrove afforestation, pest eradication etc. A field laboratory is stationed in Jadaf area and the water quality has been regularly monitored. Research carried out by the Universities is also allowed.

RAKWS inspectors and Dubai Police protect the Sanctuary by patrolling it round the clock, thus controlling any sort of violation.



Sand lark



Aquatic Vegetation



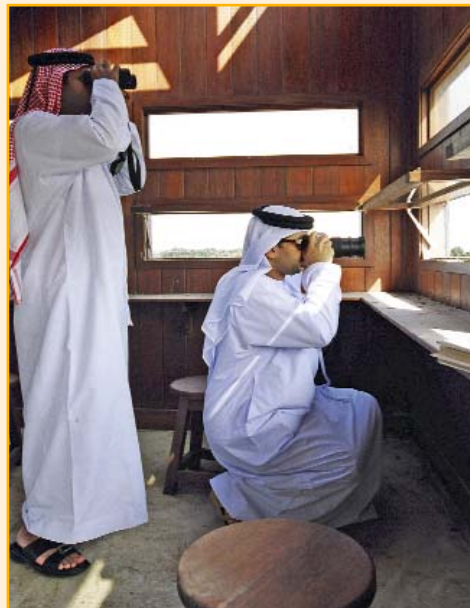
Grey Heron



Hedge Hog



Nature Education



Bird watch



Aquatic Vegetation



Desert hyacinth. *Cistanche tubulosa*

## Conservation Value

Biological diversity is a global asset of tremendous value to present and future generations. At the same time, the threat to species and ecosystems has never been as great as it is today. Species extinction caused by human activities continues at an alarming rate.

Wetlands are among the world's most productive environments. They are pockets of biological diversity that provide the water and primary productivity upon which countless plant and animal species depend for survival. Wetlands like RAKWS support high concentrations of bird, mammal, reptile, amphibian, fish and invertebrate species.

The interaction of physical, biological and chemical components of a wetland such as soil, water, plant and animal, enables it to perform many vital functions. Some of these are water storage, shoreline stabilization, erosion control, groundwater recharge and discharge, water purification through retention of nutrients, sediments and pollutants and stabilization of local climate.

Not only do they have important environmental qualities, but wetlands such as RAKWS also hold special attributes as part of the cultural and traditional heritage of the UAE; and as valuable wildlife Preserves for the region.



Biah or Flathead mullet *Mugil cephalus*





## Major Features

Located on the Arabian Peninsula, at a crossroads of east and west, this wetland enjoys intermingling features from both oriental and palaeartic regions.

RAKWS is an exceptional wetland within the United Arab Emirates due to the combined availability of high densities of invertebrates, waders, shorebirds and flamingos. It has evolved as the most interesting birdwatching spot in the UAE. The site regularly supports a number of globally threatened species of water bird that includes socotra cormorant *Phalacrocorax nigrogularis*, white stork *Ciconia ciconia*, spoonbill *Platalea leucordia*, greater flamingo *Phoenicopterus ruber*, ferruginous duck *Athya nyroca* and spotted redshank *Tringa erythropus*.

The tidal creek and extensive mudflats of RAKWS are considered one of the most important wetlands in the United Arab Emirates. The Sanctuary is an area of shallow mudflats surrounded by *sabkhas* (saturated salt flats). Its ecosystems work to provide habitat to



Mudflat/Sabkha



Mangrove fruit



Great Egret

hundreds of species of flora and fauna, including birds that use this site as their wintering and staging ground. Prevalent is a unique combination of rich species diversity and high concentration of invertebrates, fishes, birds and mammals.

The subsurface is made up of marine sands, buff sands and gray shelly sands; while the Sanctuary's natural, intertidal sediments consist mainly of fine sand with some gravel, silt and clay. Water depth fluctuates, depending on the tidal situation; and is usually 3 - 5 metres. The water in RAKWS is less saline than that of the Arabian Gulf.

Vegetation varies from only a few salt-tolerant shrubs in the flat *sabkha* surrounding the lagoon, to more dense and diverse vegetation in the raised land skirting it. Mangroves at the end of Dubai creek literally form a lush green crown that houses a wealth of floral and faunal species. The *sabkha* habitat too is not devoid of life. Despite its high salinity, it is biologically very productive for microorganisms.



General view of reed areas



Flamingo in flight



Al Jaddaf

- Roads —
- Antipollution Barrier —
- Sanctuary Boundary - - -
- Trails - - -
- Deep Water ■
- Shallow Water ■
- Tidal Areas ■
- Mangrove ■
- Scrub & Mangrove ■
- Sabkah/Salt Marsh ■
- Sand/Silt ■
- Bird Hides ■

Oud Metha Rd

Al Khail Rd

Ras Al Khor Rd

Rugby Club

Country Club

Ras Al Khor Industrial Area







## Biodiversity

The floral and faunal diversity of RAKWS incorporates an estimated 313 species. The Sanctuary has diverse ecosystems, which accommodate a wide range of genetic resources.

## Fauna

Although wildlife is abundant, most prominent is the large population of wintering and other migratory birds.

The maximum number of birds observed has been in January with up to 25,000 individuals of approximately 88 different species. The density of waders in the sanctuary is up to 21 birds per hectare in spring and autumn; and 60 birds per hectare in winter. This is higher than that found anywhere in the world. There are also approximately 1000 greater flamingos that inhabit the sanctuary and draw quite an interest from Dubai residents and tourists alike. Their numbers peak during winter. A maximum of 2,300 flamingos have been recorded in RAKWS. A super abundance of invertebrate fauna, such as



Sand Plover



Redshank



Black-headed gulls



Heron

polychaete worms, mollusks and brachyuran crabs in RAKWS, keep its bird population quite stable. Out of the 88 wetland bird species found here, 9 occur in internationally important numbers (over 1% of world population). These are:

- 1 Grey heron
- 1 Ring plover
- 1 Kentish plover
- 1 Lesser sand plover
- 1 Greater sand plover
- 1 Grey plover
- 1 Broad-billed sandpiper
- 1 Redshank
- 1 Black-headed gull



Osprey

RAKWS also hosts the largest wintering populations of mallard, pintail, common teal and wigeon. The population of raptors here constitutes a larger variety than anywhere else in the country, and includes 20 species of bird of prey, including imperial eagle, spotted eagle, lesser kestrel and osprey recorded through 20 years. Over an equivalent time span, a total of 185 bird species were recorded at the site. The Sanctuary and its environs support a good



Mangrove *Avicennia marina*



Black-winged Stilt





population of Gerbil, Ethiopian hedgehog, Arabian hare, Ruppell's fox, Arabian fox (possibly) and pariah dog. Occasionally, dolphins visit the entrance of the Khor along the Gulf, but do not venture further inshore. Other notable fauna such as insects and reptiles are abundant.

## Flora

The mangroves, locally known as 'gurm,' are represented by a single species - *Avicennia marina*. A total of 45,000 mangrove seedlings were planted here during 1991-1994. Since the time, these have multiplied several times. The black mangrove is presently well-established and flourishing; producing seedlings and spreading in the upper mid-intertidal zone of the wetlands.

Mangroves constitute the most dominant ecosystem in RAKWS. The mangrove forest is a harmonious combination of terrestrial and aquatic environments. It maintains ecological complexity and stability. The



String of beads *Halopeplis perfoliata*



Jointed glasswort *Halocnemum strobilaceum*



*Tamarix nilotica*



Arial roots of mangrove



Flamingo ponds

animal community here plays an important role in recycling nutrients and maintaining food chains. It is a nursery ground for polychaetes, crabs, fish, insects, mollusks, prawns and shrimps. The forest is highly productive and contributes food, fuel, fibre and fodder to different communities. It provides a safe breeding place for some birds and also prevents coastal erosion, stabilizes the coastline, controls sediment, retains toxicants, enhances land accretion, and enriches soil and the aquatic environment. Mangroves also act as wind breaks, thus protecting the coastal land from storm damage.

There is less vegetation in the *sabkha*; only a few salt tolerant shrubs such as *Halopeplis perfoliata* and *Tamarix sp.* occur. The raised land around the lagoon shows more dense and diverse vegetation cover dominated by the perennials *Zygophyllum qatariense* and *Cyperus conglomeratus* with occasional *Cornulaca monacantha* and the annual *Senecio desfontanai*. The parasitic plants *Cynomorium coccineum* and *Cistanche tubulosa* are also common. Along the southern boundary of the site are found a few shrubs of *Calligonum comosum*, and small stands of *Phragmites australis* in marshy locales. The lagoon is surrounded by flat *sabkha* and low sandy parts that are overgrown with salt tolerant flora.

During the spring, seasonal flowers such as *Arnebia hispidissima*, *Erodium sp.*, *Zygophyllum simplex*, *Malva aegyptia*, *Silene villosa*, *Moltkiopsis ciliata*, *Oligomeris linifolia*, *Chenopodium* and *Amaranthus* may bloom in good numbers on higher sandy grounds. Further, there are reed beds of *Phragmites australis* and *Typha domingensis*. The largest bush to be found is *Pluchea ovalis*.



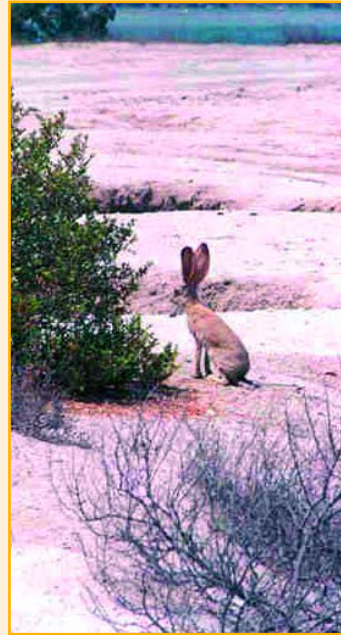


## Threats to Wetlands

There are a number of general threats to wetlands that are also of concern to RAKWS. The Sanctuary is vulnerable to human disturbance (visitors sometimes walk onto mudflats to approach flamingos); vehicles (these destroy vegetation and bird nests as well as disturb bird populations); development; infiltration by cats and rats; erosion; dredging; pollution (risk is high due to proximity of the site to Dubai city and enclosed nature of the water body); incidences of illegal fishing, harvesting of bird eggs; and intrusion by alien species (they push out the natural population of native species which, therefore, decline).

## Protection

Because of the hazards facing wetlands, legislation covering marine wetlands in the UAE exists at both the Federal and Emirate levels. Federal Law No.9 of



Hare



Young mangrove

1983 regulates hunting of wild and marine birds of all species. The Law also prohibits collection or destruction of birds' eggs. Relatively recently promulgated are Federal Law No.23 of 1999 on Exploitation, Protection and Development of Marine Bio-Resources in the UAE; and Federal Law No. 24 of 1999 for the Protection and Development of the Environment. At the Emirate level, Law No. 11 of 2003 on the ESTABLISHMENT of PROTECTED AREAS in the EMIRATE of DUBAI prohibits any activities or procedures, which may destroy, damage or deteriorate the natural environment, damage wildlife, marine flora and fauna or affect the aesthetic standard in protected areas.

Threats to wildlife and their habitats in RAKWS have reduced enormously on account of adequate patrolling by both Dubai Municipality and Dubai Police; and the effective implementation of the laws and regulations. Protection will further improve with proper implementation of the sanctuary management plan.



Police Patrol



Clean up campaign

## Nature Education

RAKWS is of high ecological value. Besides, its location in the vicinity of human habitation, offers enormous opportunities for nature conservation education. With the aim of familiarizing citizens with their natural heritage, the natural processes by which this is sustained, and for demonstrating its conservation benefits, Dubai Municipality has introduced environmental education facilities in RAKWS. Bird watch hides have been installed for visitors to view the plants, animals and habitats. The hides constitute the first step towards a larger visitor education programme. Visitors are now officially allowed to enter the Sanctuary and go to specific vantage points, at present, the bird watch hides.



## Bird Watch Hides

For the visitors' viewing pleasure, there are three bird watch hides (see map). These hides are situated at three strategic locations and named after important features of each site:

**Hide One**, named 'GURM/MANGROVE,' is located near a mangrove forest and *sabkha* (salt flat) habitat off Ras Al Khor Road.

**Hide Two**, named 'FANTIR/FLAMINGO,' is located near the flamingo roost, off the junction of Al Wasl and Oud Metha Roads.

**Hide Three**, named 'AL BUHAIRA/LAGOON,' is located close to Al Jadaf.

Optical and other materials provided to visitors

Each bird hide offers a panoramic view of the Sanctuary and is equipped with telescopes, and picture panels skirting three sides. Binoculars are supplied to visitors at the time of entry. Also available will be publications such as brochures, checklists of birds and other flora and fauna of the Sanctuary.

**Visitor numbers per bird hide**  
A maximum of 10 individuals at a time are allowed in each bird hide.

**Visiting days**  
At present, guided visits are permitted only on Sundays and Wednesdays.

**Visiting hours**  
8 am - 12 noon.

**Visitory process**  
Visitors must apply to:  
Marine Environment and Sanctuaries Unit,  
Environment Department, Dubai  
Municipality P O Box. 67 Dubai  
Tel +9714 206 4240/206 4244/206 4260  
Fax +9714 227 0160

The application form can be downloaded from the website <http://www.environment.dm.gov.ae> or collected from, and submitted to, the above Department. Apply only three days prior to visit. At least two working days are required to process the permits.

Application as well as comments/complaints can be e-mailed to: [marabdullah@dm.gov.ae](mailto:marabdullah@dm.gov.ae)



Photos: Reza Khan, Anisuzzaman Khan, Nick Crawley and WWF Text: Mohammed Abdul Rahman Hassan, Anisuzzaman Khan and WWF

## Rules and Regulations

### The Law

Local Law No. 11 of 2003 on the ESTABLISHMENT of PROTECTED AREAS in the EMIRATE of DUBAI specifies:

"Any work, acts, activities or procedures which may destroy or damage wildlife, marine flora and fauna, and affect the aesthetic standard in protected areas, shall be prohibited; particularly the following:

1. Hunting, transporting, killing or disturbing marine or other wildlife; or undertake any acts which lead to their destruction
2. Hunting, removal or transporting of any creatures or organic materials such as mollusks, coral reefs, rocks or soil for any purpose
3. Destroying or transporting plants from the protected areas
4. Damaging or disfiguring geological or geographical formations of areas considered to be the habitat of animal or plant species or their proliferation
5. Introducing non-indigenous species to the protected areas
6. Polluting the soil, water or air of the protected area by any means
7. Constructing buildings, structures, roads; using motorized vehicles or practicing any agriculture, industrial or commercial activities in the protected areas, or practice any activity, acts or works in areas surrounding the conservation area unless by a permit from the competent authority in accordance with approved conditions and rules"

*Violators of rules and regulations can be prosecuted under the Local Law No. 11 of 2003, and local order No. 61 of 1991*





## Sanctuary Rules and Regulations

### **WARNING:-**

**The following practices are prohibited and may result in heavy fines and legal action**

- 1 ENTERING THE SANCTUARY WITHOUT A PERMIT FROM ENVIRONMENT DEPARTMENT.
- 1 PARKING OUTSIDE THE DESIGNATED AREAS.
- 1 INTRODUCING PETS OR FOREIGN SPECIES INTO THE SANCTUARY.
- 1 ENTERING BEYOND THE TRACK AREA
- 1 POLLUTING THE SOIL, WATER, OR AIR OF THE SANCTUARY.
- 1 APPROACHING OR HARMING WILDLIFE.
- 1 DAMAGING VEGETATION OR GEOLOGICAL FORMATIONS.
- 1 COLLECTING OR TRANSPORTING PLANTS, ANIMALS OR PARTS THEREOF.
- 1 PRODUCING NOISE OR USING NOISE PRODUCING TOOLS/EQUIPMENT.
- 1 USING FIREARMS, HUNTING OR TRAPPING OF ANY KIND.

### **Enjoy your visit**

For suggestions and complaints:

Emergencies Tel: 223 2323

Marine Environment & Sanctuaries Unit Tel: 206 4260

Website: [www.environment.dm.gov.ae](http://www.environment.dm.gov.ae)

