

# **Protected Areas in the State of Kuwait**

**Prepared by: Hani Abbas Al-Tamimi**

**Environment Public Authority - State of Kuwait**

**P.O.Box: 24395 Safat Kuwait 13104 e-mail: hani\_abbas@hotmail.com**

## **Introduction:**

Kuwait is an independent state situated at the extreme northwestern end of the Arabian Gulf between latitudes 28°30' and 30°05' North and longitudes 46°33' and 48°36' East; it is bounded to the north and west by Iraq, to the south by Saudi Arabia, and to the east by the Gulf. Kuwait has a population of 3.328.136 (2007). The State of Kuwait comprises the mainland and nine offshore islands with a total area of 17,818km<sup>2</sup>, including the inhabited island of Failaka, the large low-lying muddy island of Bubyān near the mouth of the Shatt Al-Arab, and seven small coral islands mostly in the south. The terrain is flat or gently undulating, rising to a height of 271m in the extreme southwest of the country. The principal topographic features are Wadi Al-Batin, which runs along the western border with Iraq, and the Jal Az-Zor escarpment (with a maximum elevation of 145m), which extends approximately 80km from Atrāf northeast to Al-Bahrah and borders the northern shore of Kuwait Bay. There are numerous wadi systems which drain mostly to the northeast, but surface flow occurs only after exceptional rainfall. The northeast also includes extensive bare mudflats which form part of the Shatt Al-Arab delta. Most of the interior is generally stony with a very sparse cover of grasses and low shrubs. The climate is characterized by very hot, dry summers and cool rainy winters. The average annual rainfall in Kuwait City is about 111mm, but other parts of the country receive as little as 23mm or as much as 206mm. Most of the rainfall occurs as light winter showers. Summer temperatures are extremely high, often exceeding 45°C during July and August. In winter, temperatures often rise to over 20°C during the day, but then fall rapidly at night, especially inland. The humidity is generally high and often exceeds 90%. Dust and sand storms are common throughout the year.

## **Biodiversity in Kuwait :**

– **Terrestrial Ecosystem:** Twenty-eight mammalian species live in Kuwait. But four large mammals have been extirpated; the dorcas gazelle, mountain gazelle , the Arabian sand gazelle and the Asiatic cheetah. Other large carnivores such as the wolf, caracal and jackal are now extremely rare. Among the endangered mammalian species are the fennec fox, the red fox, the honey badger, the Indian grey mongoose and the wild cat. Causes for wildlife extinction are habitat destruction and extensive and unregulated hunting.

The reptile fauna has no endemic species though 40 species have been recorded. Kuwait possess a fairly rich avifauna despite its small size and harsh climate with more than 350 species recorded; however, only 18 species breed locally whilst the rest are passage migrants or winter visitors. Kuwait is situated at the crossroads of several major bird migration routes and between two and three million birds pass each year. The intertidal areas are important feeding areas for waders and shorebirds and with the destruction of the marshes in Iraq the small wetlands at Jahra have become increasingly important as a refuge for passing migrants. The coral islands are important breeding areas for four species of tern and the Socotra cormorant.

There are 374 recorded species of plants in 55 families. These include about 250 annuals, 83 herbaceous perennials and 34 shrubs and under-shrub species and one tree species.

– **Marine ecosystems:** Kuwait's marine and littoral ecosystems contain the bulk of the nation's biodiversity heritage. These ecosystems are comprised of several distinct habitats, which contain diverse assemblages of species, many of which are of economic as well as ecological importance. The habitats of particular biodiversity importance and interest are the muddy intertidal shores, the sabkhas, oyster banks, sea grass and algal beds, the coral reefs and the open water habitats.

To date, over 250 species of invertebrates have been recorded from the intertidal zone, and nearly 200 species of zooplankton and phytoplankton and 105 species of marine plants are recorded from Kuwaiti waters. Over 240 species of fish are known, 95 of which are associated with coral reefs:

many marine species such as shrimps and grouper are of major importance for commercial and sport fishing.

**Institutional Arrangement:**

Many governmental, and non-governmental organizations in Kuwait have mandates to use natural resources, therefore, involve in activities related to biodiversity. However, only four government institutions: Environment Public Authority (EPA); Public Authority for Agriculture and Fish Resources (PAAFR); Kuwait University (KU) and Kuwait Institute for Scientific Research (KISR) are responsible by Amiri Decrees for management, conservation and research on biodiversity in the State of Kuwait. The non-governmental societies such as the Kuwait Environment Protection Society are also active in pursuing biological diversity conservation and management.

The activities of these organizations including EPA, PAAFR, KISR, KU and others are:

- Environment Public Authority (EPA): Established in 1996 in accordance with Law No. 21/1995 and 16/1996. EPA is the focal point for CBD, CITES as well as the state member in IUCN. It has the mandate to establish guidelines for conservation of biodiversity as well as designation and management of protected areas in Kuwait.

- Public Authority for Agriculture Affairs and Fish Resources (PAAFR): established in 1983 in accordance with Law No. 94/1983. supervises all production activities on state level, landscaping activities in coordination with Kuwait Municipality (KM) and grazing lands in collaboration with concerned bodies in the State. PAAFR was also given the responsibility to establish national desert parks and to undertake their supervision. It was also mandated to control desertification by using all methods for its prevention in coordination with concerned bodies and in accordance with plans made by Kuwait Municipality.

- Kuwait Institute for Scientific Research (KISR): Established in 1967, undertakes research on Kuwait's ecosystems and resources and provides scientific support for biodiversity conservation and protected area designation and management.

- Kuwait University (KU): The Faculty of Science at Kuwait University has been involved in research in a number of biodiversity and protected area, notably in Kuwait Bay and at Al-Khiran on the southern coast. It also provides scientific support for biodiversity conservation and protected area designation and management.
- Kuwait Center for Volunteer Work (KCVW): Established in 2004 by Amiri Decree No. 77/2004. The Center is involved in design and implementation of volunteer work projects in various aspects, among which are protected areas (Sabah Al-Ahmad Nature Reserve and Sulaibikhat Bay) and conservation of biodiversity (release of many captive wildlife species in Sabah Al-Ahmad Nature Reserve or to the sea).
- Kuwait Environment Protection Society (KEPS): Founded in 1974, it aims to Protect the environment, control sources of pollution in all domains, unify and coordinate efforts of persons active in environmental matters. Working to create an environmental and scientific method of public thinking in order to establish the necessary remedial legislation for the protection of environment against pollution and preservation of the natural resources of the country by mutual cooperation with the relevant authorities.

**Protected Area Legislation:**

Conservation of nature has been prominent in the environmental policy adopted by the Council of Ministers. The main law governing the conservation of natural habitats is Decree Law No.62 of 1980, which indicates a general policy for the protection of the environment and provides for designation of two categories of protected area, National Parks and Nature Reserves. Additional legislation or regulations related to biodiversity and protected areas include:

- Law No 21/1995 & Law No 16/1996 Establishing Environmental Public Authority.
- Decision No. 210/2001 regarding the executive law of the establishment of the Environment Public Authority. Articles (81-85).
- The National Biodiversity Strategy of the State of Kuwait.

## **Protected Areas in Kuwait:**

### **(1) Sabah Al-Ahmad Wildlife Reserve (Kuwait National Park):**

The largest terrestrial ecosystem designated so far as protected area in Kuwait is located in the northeast of Kuwait. Following a study conducted by KISR in 1986, the area was first established in 1990 as a Nature Reserve. The Ministry of Defense commenced protection measures of the park in December 1995 by erecting a fence and patrolling throughout its boundaries. Formerly known as Kuwait National Park, was later renamed and “Sabah Al-Ahmad Nature Reserve” in 2003. The Reserve is managed by Kuwait Center for Volunteer Work. The park is about 330Km<sup>2</sup> extending from Um-Alaish in the north to Kuwait Bay in the south and Hoban in the west to medirah in the east. The purpose of establishing Kuwait National Park/Nature Reserve is to set aside an area of physical and biological importance to conserve and manage natural renewable resources and to allow, to a certain extent, recreation, education and research opportunity to the public.

The following plant communities dominate the National Park's habitats: *Rhanterium*, *Haloxylon*, *Halocnemon*, *Seidlitzia*, *Nitraria*, and *Zygophyllum*. Thirty-nine species were identified at the coastal plain and 87 species in the desert habitats. The park is a major source of plant genetic diversity in the country.

**Geographical aspects:** A rocky escarpment rising steeply to 116 m from the coastal mudflats and associated salt marshes and sand-dunes on Kuwait Bay. A gravel plain extends northwards from the escarpment ridge and gives rise to the extensive wadi system of Ar-Rimam. Most of the park is sandy desert, with much gravel in northern areas.

**Flora:** Dunes of the coastal zone are dominated by *Zygophyllum*, higher areas of sand by *Rhanterium* and *Cyperus*, whilst on the gravel plains *Stipa* grass is dominant. In spring, the playas are covered in *Gynandris* irises.

**Fauna:** At least 190 species of birds have been recorded. A representative desert bird community (seven breeding species) occurs. An important raptor migration includes *Aquila clanga*, *Aegyptius monachus*, *Aquila helica* and *Falco naumanni*.

**(2) Al-Jahra Pool Nature Reserve:**

A man-made wetland comprising sewage lagoons and reed-beds in an area of sabkha at the extreme western end of Kuwait Bay, remarkable for the great diversity of birds which have occurred during the migration seasons and in winter. One of the non-marine wetland in Kuwait, protected as a Nature Reserve and Bird Sanctuary and managed by EPA. The area is protected as a Nature Reserve, established in 1987 with an area of 2.5km<sup>2</sup>, Later expanded to 3 km<sup>2</sup> in 1998 and then to 3.5km<sup>2</sup> in 2001. An official management plan exists, and is currently being implemented. Three full-time guards have been employed since February 1993. And two EPA staff members since 2001. Military patrols expel hunters for security reasons, and thus provide some protection. The site has been identified as an Important Bird Area by Birdlife International (Evans, 1994).

**Physical and ecological features:** A complex of open, shallow pools and extensive reed-beds of *Phragmites australis*, formed by domestic sewage and other waste water from the town of Al-Jahra flowing across sandy sabkha at the extreme western end of Kuwait Bay. The pools are shallow (average depth about 10 cm) and permanent, but show marked seasonal fluctuations in size. The pool is currently irrigated by use of tertiary treated water. There are scattered halophytes on the sabkha, as well as some old plantations of *Tamarix* sp.

**Disturbances and threats:** Destruction of vegetation was common before mid-1990. Shrubs were used for firewood, and off-road vehicles damaged the sabkha crust. A well known area for dove and other migratory birds hunting as well as a salt shrub grazing.

**Fauna:** As a permanently wet and green area, the wetland attracts a very wide variety of migrant birds during the migration seasons and in winter, and provides an important refuge from hunting. At least 220 species of birds have been recorded at the site. Waterfowl present in mid-winter

have included *Podiceps nigricollis*, *Phoenicopterus ruber*, *Gallinula chloropus*, *Fulica atra* and *Larus ridibundus*, along with small numbers of several species of ducks and shorebirds. *Crex crex* has occurred on migration (in May and September). The site is also important for migrating birds of prey. Field studies were carried out by Birdlife International experts in 1996 and 1998. Continuous monitoring and study is currently done by Environment Public Authority staff members either by daily observation or periodical visits to the reserve.

**Flora:** The site contains the only significant stands of freshwater aquatic vegetation in Kuwait that is *Phragmites australis*, other vegetation is halophytes in large communities such as *Suaeda aegyptiaca*, *Tamarix sp.* and *Nitraria sp.* .

**Conservation education:** The site has great value as a potential field study center for all educational levels up to university research. EPA opened a new scientific center in the reserve in 2003.

### **(3) Doha Nature Reserve:**

The Doha Nature Reserve, established in 1988, is located on the south side of Kuwait Bay, about 20-25 km west of Kuwait City center, Al-Jahra Region. Its area of 4.5 km<sup>2</sup> has inter-tidal mudflats and sabkha with some reed-beds, important for migratory waterfowl during the migration seasons and in winter. The reserve is fenced with chain-link fencing on its landward sides and managed by EPA.

**Physical and ecological features:** A large area of sandy sabkha on the Doha Peninsula in the northwest is flooded by exceptionally high tides and supports some salt-tolerant vegetation. Drainage water from nearby chalets and an Entertainment Park flows across part of the sabkha and supports about 0.5ha of *Phragmites* reeds. There is also a major outlet for seawater coolant used by the Doha power stations in this area.

Some protection from hunters is provided on the seaward side by barbed wire fences. The Nature Reserve is bisected by a public track to chalets. Doha Nature Reserve have been identified as an Important Bird Area by Birdlife International (Evans, 1994).

**Disturbances and threats:** There is some local pollution from power stations on the Doha peninsula. Hunting is common, and causes considerable disturbance to the wintering waterfowl.

**Fauna:** The sabkha area in the Nature Reserve provides a secure roosting site for thousands of shorebirds and other waterfowl which feed on the adjacent mudflats at low tide. At least 70 species of birds have been recorded in the area. The most abundant species at the roost are *Charadrius hiaticula*, *C. alexandrinus*, *C. mongolus*, *C. leschenaultii* and *Pluvialis squatarola*.

The mudflats support a large population of mudskippers (Gobiidae) of three species, *Scartelaos viridis*, *Periophthalmus koelreuteri* and *Boloepthalmus boddarti*. Crabs are extremely numerous; at least 13 species have been recorded including an endemic species of Ocypodidae, *Cleistostoma kuwaitense*.

#### **(4) Sulaibiya Rresearch Station:**

In 1979, an area was set aside to establish a satellite field station for conducting range management research and conserving the renewable natural resources in the *Rhanterium/Cyperus* steppe. The area (20 Km<sup>2</sup>) later expanded to 40 Km<sup>2</sup> in 2001, located in Kabd (southwest of Kuwait City), named Sulaibiya Field Station (SFS) and managed by the Kuwait Institute for Scientific Research. It is surrounded by two-meter high chain fence and has a one million-gallon capacity reservoir supplied with brackish water of 3,500-4,000 ppm. More than 60 wildlife species are recorded in the area.

#### **Other Protected Areas:**

- Sulaibikhat Bay: a fenced bird sanctuary on Sulaibikhat bay (0.75 km<sup>2</sup>). Managed by the Kuwait Center for Volunteer Work.
- PAAFR areas: 5 areas fenced by PAAFR as protected areas, each with an area of 1 km<sup>2</sup>.
- The protected oilfields, military and border areas.

#### **International Cooperation:**

- United Nations organizations including United Nations Environment Programme (UNEP); United Nations Educational, Scientific and Cultural Organization (UNESCO), World

Health Organization (WHO), United Nations Development Programme (UNDP) and United Nations Food and Agriculture Organization (FAO).

- Convention on Biological Diversity (CBD): Kuwait signed the Convention on Biological Diversity at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, in June 1992. And ratified the convention in 2002 by legislation No.1/2002.

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Kuwait joined CITES in 2002 by legislation No. 17/2002.

- International Union for Conservation of Nature (IUCN): EPA is the state member representing Kuwait in IUCN. Other members are KISR (GO) and KEPS (NGO).

#### **Regional Cooperation:**

- The Cooperation Council for the Arab States of the Gulf (GCC): In 2002, Kuwait issued legislation No. 312/2002 joining the Regional Agreement on Conservation of Wildlife and their Natural Habitats in the GCC Countries.

- Regional Organization for the Protection of the Marine Environment (ROPME): The Regional Organization for the Protection of the Marine Environment (ROPME), with offices based in Kuwait, has been involved in research activities, including the monitoring of marine pollution, and has assisted in the development of regional coastal zone management plans.

- The Council of Environmental Affairs Ministers - Arab League.

#### **Local Cooperation:**

- National Biodiversity Committee: In order to coordinate activities and follow up on issues related to Biodiversity, the Environmental Public Authority has established the National Biodiversity Committee. Members of the Committee include representatives of EPA, KU, KISR, PAAFR, Kuwait Municipality, Ministry of Foreign Affairs and the Kuwait Environment Protection Society. The committee's most noted accomplishment is the proposed legislation to establish a series of terrestrial and marine protected areas in Kuwait (1997). The proposed legislation is still pending under deliberation at the council of ministers.

