



Mangrove Conservation Programme

Mangroves (*Al-Gurm*) are evergreen trees and grow up to a height of 5 meters along the coastal areas of Qatar. Mangrove swamps were a common sight in the Arabian peninsula and were used as building materials and forage for livestock in the past. Along the coast line of Qatar scattered mangrove plantations still can be observed. *Avicinnia marina* is the predominant mangrove species found in the region.



A general view of RLC-Mangrove Swamp

Mangroves have respiratory roots coming out of the ground around the tree utilising the atmospheric oxygen during low tides. The leaves of mangroves are from light to dark green in colour and are covered by salt glands to excrete excess salt.



Root system of mangrove plants

The plant bears yellowish flowers, in April-June, with mild to medium characteristic odour and the fruit emerges in September.



Mangrove plant bears yellowish flowers

Mangrove seeds (weighting approximately 10 g) are normally collected during the second half of the month of September and are planted in the beginning of October. The seeds are collected from the inner part of Al-Dakhira and Wakrah mangrove swamps. The seeds are collected either directly from the matured plant or the undamaged fallen seeds can also be collected. The collected seeds are soaked in saline (2% seawater) solution for 2-3 days. Before planting the pericarp (top layer) is removed to facilitate germination of seeds.



A mangrove plant bearing fruits

The mangrove swamps play a very important role in stabilising the coastal areas, attenuating seawater intrusion, breaking storm energy, producing nutrients, providing timber and fodder, and creating

breeding grounds for a variety of fish and shellfish species.

Mangrove has various medicinal properties and was significantly used in folk medicine. The roots were used as aphrodisiac and leaves were used as a poultice.

Frequent attacks of algae are the main threat to growing seedlings of mangrove. Algae by covering the plant leaves reduce the light available to plant thus reducing the rate of photosynthesis. A fence has been erected at the approach of the creek to prevent algae from entering the swamp.



Sand towers and sand pellets are typical markings of ghost crab and small crabs

The construction of buildings, roads and pipelines have a potential to alter the tidal activities by reducing the seawater flow into creeks which results in plant mortalities. The mangrove swamp site has been declared as a protective area barring from any future development. Oil spills by coating the roots of mangrove plants could significantly reduce growth and could cause death in juvenile plants.



Crabs are the common predators in the swamp
In 1988 the Ministry of Municipal Affairs & Agriculture in co-ordination with Japan International

Co-operation Agency started a programme to afforest mangrove (*Avicennia marina*) in Qatar.

The intertidal zone exhibits various microtopographic features such as mud flats, calcium & bicarbonate rich zones, salt marshes and silty zones creating suitable conditions for mangrove plantations.



Mangrove seeds could drift for miles and germinate at suitable sites in inter-tidal zones

Mangrove swamps create unique ecosystem and attract other plant species at the fringes of the swamp such as salt marsh vegetation like *Arthrocnemum glaucum*, *Limonium axillare*, *Eleusine compressa* and *Zygophyllum qatarense*. This zone provides habitat to a variety of rodents, reptiles and insects.



Different stages of mangrove development

The site was selected for mangrove plantation and by 1995 approximately 2000 mangrove plants existed in the area. After the development of RLC the task to

manage the swamp was assumed by the management of RLC in 1995.



An Ariel view of RLC mangrove swamp

The management of Ras Laffan Industrial City initiated a mangrove conservation programme which includes the protection of the existing plants and planting & sowing of additional seedlings and seeds respectively. Currently the mangrove population has increased 10,000 in numbers.



An Ariel view of RLC mangrove swamp



An oil boom is permanently placed at the creek inlet



Large number of shells found in the swamp



A view of the swamp



Shells thrive in the swamp



Fight for best spot



A view of Qatargas through the swamp



Salt glands excrete excess salt



Flora associated with mangrove swamp

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