



**HABITAT PRESERVATION PLAN - HPP
FOR ENVIRONMENTAL SPECIALISTS**

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ENVIRONMENTAL SPECIALIST CURRICULUM





**TERRESTRIAL ECOLOGY ASSESSMENT STUDY
FOR ENVIRONMENTAL PROFESSIONALS**

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LEARNING OBJECTIVES

Terrestrial Ecology - Overview

Available Data Review

Baseline Terrestrial Ecology



TERRESTRIAL ECOLOGY

Terrestrial ecology is the study of land-based ecosystems, their populations and communities of plants, animals, and microbes, their interactions with the atmosphere and with streams and groundwater, and their role in the cycling of energy, water, and the major biogeochemical elements such as carbon and nitrogen.

Terrestrial ecological conditions at the site were assessed through a combination of reviewing data available through a desktop-based study and visiting the site.

The site survey was complimented with digital photography and accurate site location using GPS. Several areas within the project site are currently being used by the NPP and the Canal project and hence significantly anthropized.

AVAILABLE DATA REVIEW

Plant communities that may be encountered in Qatar have been classified and described by Batanouny (1981). The habitats and associated plant communities reported in the project area during previous studies include:

- ✓ Intertidal flats;
- ✓ Lagoon and salt marsh with an *Arthrocnemum glaucum* community;
- ✓ Saltmarsh with an *Halocnemum strobilaceum* community;
- ✓ Mangroves with *Avicennia marina* trees;
- ✓ Sabkhas that are devoid of vegetation;
- ✓ Sand dunes with a *Zygophyllum qatarense* community;
- ✓ Sandy desert plain with a *Zygophyllum qatarense* community; and
- ✓ Gravelly desert plain with an *Acacia tortilis* community.

REGIONAL OVERVIEW

The coastal area from Al Wakrah to Mesaieed is of national importance for shorebirds (Chalmers, 2008), with approximately 2000 mostly marine or shorebirds reportedly present during winter and more than 3,000 during spring and autumn during migration.

These birds feed in the wide shallow tidal flats and roost or feed in the lagoons along the coast at high tide. Other fauna, mammal, reptile and insect, were reported to be limited in the NPP site. Only a few burrows and holes were reportedly sighted during previous surveys.

BASELINE TERRESTRIAL ECOLOGY

The baseline terrestrial ecological survey for the Project site included flora, fauna and their habitats.

The onshore habitats adjacent to project were surveyed with particular focus on the following:

Mangrove Areas: The current status and importance of the mangrove areas in Um Al Houl and nearby mangrove were identified and assessed by reviewing literature, consulting with experts, and completing field surveys, and all mangrove areas in the Development Study area were mapped in detail.



BASELINE TERRESTRIAL ECOLOGY +

Salt Marsh and Sabkha Areas: Seven (7) sites, most of which are near the mangrove areas, were selected to characterise the local ecosystem. A representative habitat model within and near the Project site was created.

Walkover surveys were carried out on-site and in proximity of the project in areas with significant visible vegetation above the high-water mark.

Observations of fauna, including avifauna, were recorded.



BASELINE TERRESTRIAL ECOLOGY +

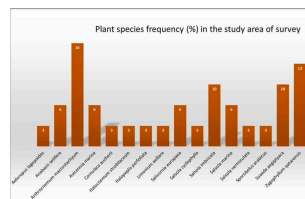


Figure 4-24 Flora Species Distribution



Figure 4-26 Damaged Area of Low Marsh

Vegetation was assessed using the Braun - Blanquet (1965) method to describe spatial variation from the coastal shore to the inland area. Species cover and abundance were estimated within 11 square plots, 5 m x 5 m, distributed across the area. The vegetation and floral survey was conducted from 26 October to 7 November 2014.



REGIONAL OVERVIEW +



2011



2014

During the field survey, the extent of dead standing mangrove appeared larger than that shown in the image taken in 2014, indicating that the desiccation of the mangrove habitat is increasing.



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