

**Environment Arabia Consultancy Services**

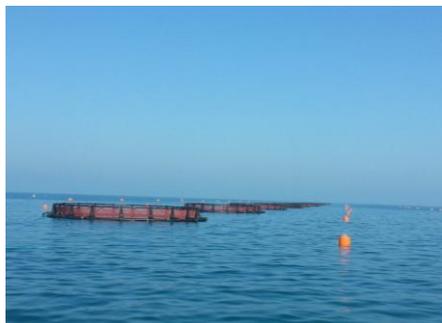
**Marine Project Descriptions**

**December 2014**



## **Asmak Fish Farm Operation Environmental Management Plan**

**Client:** ASMAK Company B.S.C (c)  
**Location:** Ghumais, Bahrain  
**Dates:** June 2014



Environment Arabia was appointed by ASMAK Company to prepare an Operation EMP addressing the operation of their offshore and onshore fish farm facilities. The project is being advanced by a consortium of investors including the private sector, Mumtalakat (the national wealth fund) and the Bahrain Development Bank in response to the Bahrain government's initiative to address long term food security for the country. During initial phases of production, all produce will

be for the Bahrain market. Export may occur but only during later phases.

Following production of the Operation EMP, Environment Arabia conducted monitoring of the facility to ensure compliance.

## **Monitoring Program for Oyster Bed Sites Marine Ecological Monitoring Programme**

**Client:** Ministry of Culture, Bahrain  
**Location:** Northern Off-shore of Bahrain  
**Dates:** February 2012 – November 2012

In February 2012, Environment Arabia was commissioned by the Directorate of Human Resources & Finance – Ministry of Culture, Kingdom of Bahrain (the 'Client') to conduct a *Monitoring Programme for the Oyster Bed Sites* (in the Kingdom of Bahrain).

Specialist surveys were developed in order to provide site-specific information on a number of biological, physical and chemical parameters. Specifically, the project objectives were to:

1. Provide comprehensive baseline data related to three core areas of oyster beds.
2. Provide information on the pearl oyster populations across the study area, including population size structure.
3. Produce a map which illustrates the density of pearl oysters across the geographical extent of the study area.
4. Identify and develop appropriate permanent monitoring sites which can be revisited over a period of time in order to obtain long-term data.





Following the survey and monitoring, the report was submitted to the Ministry of Culture in November 2012. The final report was included in the submission of the Ministry of Culture to UNESCO.

### **Construction, Deployment and Monitoring of Artificial Reefs in the Kingdom of Bahrain**

**Client:** Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW), Ministry of Municipalities and Urban Affairs (MMUA)

**Location:** Marine Offshore Area, Kingdom of Bahrain

**Dates:** Sept 2011 – Sept 2013

On 20<sup>th</sup> September 2011, Environment Arabia was commissioned by the Public Commission for the Protection of Marine Resources, Environment and Wildlife and under the auspices of the Ministry of Municipalities and Urban Affairs (Special Projects Unit - SPU) to construct, deploy and monitor a total of 10 artificial reef complexes, each comprising 256 reef units, within Bahrain's territorial waters. An additional 6 units (3 anti-trawl and 3 wind tower designs) were included within each reef complex.

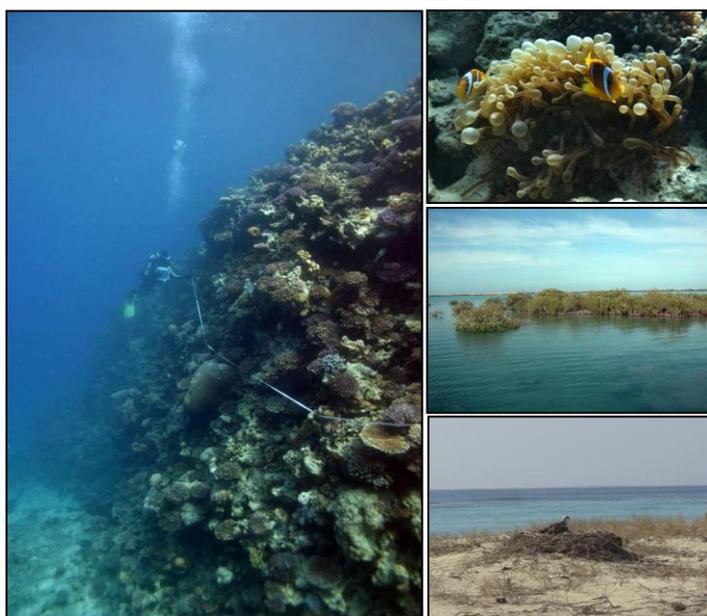


### **King Abdulla Economic City Marine Ecological Survey**

**Client:** 5 Capitals Environment and Management Consulting

**Location:** King Abdullah Economic City, Rabigh, Saudi Arabia

**Dates:** February 2009 – August 2009



Environment Arabia was commissioned by 5 Capitals Environmental and Management Consulting on the 2<sup>nd</sup> February 2009 to conduct baseline environmental surveys at the site of the King Abdullah Economic City (KAEC) south of *Rabigh* in the Kingdom of Saudi Arabia (KSA).

This project did not provide assessment of potential impacts associated with future development of the study area and was purely to assess the ecological status of the area and as an input to

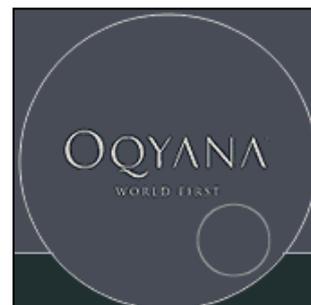
a Strategic Environmental Assessment, which was prepared by 5 Capitals for the main Client.



### **Australia Islands in the World Project**

#### **Phase 1 Revision of the Conceptual Master Plan – Environmental Input**

**Client:** Oqyana Ltd  
**Location:** Dubai, UAE  
**Dates:** April 2006 – December 2006



Environment Arabia was appointed as environmental advisor for the proposed development of Australia Islands within the World project, Dubai. Best environmental practice was incorporated during the design of the new master plan for this development. This provided an opportunity to integrate environmental management solutions and enhancements at the earliest stage of project planning, helping to ensure that the resulting plans were well-planned, incorporate sustainable concepts and capitalise on the opportunity to create added value in terms of the overall environmental character of the islands.

### **Aqaba Port**

#### **Coral Mapping In the ASEZ Southern Port and Middle Port Areas**

**Client:** MSS and ADC  
**Location:** Aqaba, Jordan  
**Dates:** February 2006

Environment Arabia was commissioned in 2006 to undertake a coral mapping survey in preparation for the implementation of port development plans in Aqaba. This information was used to identify sensitive ecological habitats, determine the impact of the proposed developments and establish any mitigation that may be required. The assessment included a preliminary ecological scoping study, with the aim to produce GIS Habitat and coral density maps, and photographic and video documentation of coral habitats within the study area, as well as a report as to the health, identification and coverage of corals in the area.

### **The World Project**

#### **Environmental Baseline Assessment Including Marine Ecological Surveys**

**Client:** Nakheel  
**Location:** Dubai, UAE  
**Dates:** January 2006 – June 2006



Environment Arabia was commissioned by Nakheel to collate an environmental baseline report for the World development in Dubai. Secondary data was compiled in a number of areas, including, but not limited to, hydrodynamics, sediment transport, water quality and marine ecology. As part of the study, primary marine survey data from the World site and associated dredging borrow areas, using diving, grab sampling and water quality sampling methods was also collected.



## **Diyaar Al Muharraq Marine Ecological Surveys**

**Client:** Scott Wilson  
**Location:** Muharraq, Bahrain  
**Dates:** January 2006 – March 2012

Environment Arabia was commissioned by Scott Wilson in January 2006 to conduct marine ecological surveys of Diyaar Al Muharraq reclamation development off the east coast of Muharraq, Bahrain. Baseline marine surveys and environmental monitoring for the reclamation and proposed borrow areas was undertaken. A number of survey methods were used, including: diver recording; grab sampling of both sediment and infauna; drop video sampling (for habitat mapping); and water quality sampling (both laboratory analysis and *in situ* monitoring using a hydrolab).



## **RAF Akrotiri FMB Scoping and Baseline Studies**

**Client:** Defence Estates, UK  
**Location:** Akrotiri, Cyprus  
**Dates:** September 2005 – November 2005



In September of 2005, Haskoning UK Ltd. (HUK) was commissioned by the United Kingdom's Defence Estates to undertake a marine ecological baseline study of the waters surrounding the existing harbour and mole at the Akrotiri Royal Air Force (RAF) Base, Cyprus. Environment Arabia headed up the marine ecological survey team. The primary aim of this baseline ecological survey

was to form part of an overall EIA for the design and construction of a new Forward Mounting Base within the Western Sovereign Base Area.

## **Tubli Bay Rehabilitation Study Phase 1 Environmental Investigations**

**Client:** Ministry of Municipalities and Urban Affairs (MMUA)  
**Location:** Tubli Bay, Bahrain  
**Dates:** August 2005 - October 2005

In August 2005, Environment Arabia was commissioned by the Ministry of Municipalities & Urban Affairs to undertake a study to assess the current status of the environment and land use of Tubli Bay and the surrounding coastline.





The objective of this study was to review all available studies or data on Tubli Bay with respect to identifying its current and possible future shoreline boundaries, as well as providing details on specific measures and actions required in order to rehabilitate and preserve the bay.

This report represented an initial study as part of a more detailed programme to aid the MMUA and other authorities in the Government of Bahrain in assessing and planning future activities within the bay.

### **Red Sea Coastal Zone Management Plan Environmental Consultancy Services**

**Client:** Scott Wilson  
**Location:** Jeddah, Saudi Arabia  
**Dates:** May 2005 – December 2005

Environment Arabia was commissioned in May 2005 by Scott Wilson, to produce the Red Sea Tourism Coastal Zone Management Plan (CZMP). The aim of producing the CZMP was to ensure sustainable development within the study area (i.e. to utilise the available resources in an effective, controllable and sustainable manner to generate revenue for the economy). The study included marine ecological surveys carried out by our specialist H.S.E divers, to determine the baseline conditions in the Red Sea in order to assist decision makers in planning for the future of the area.



### **Qatar Steel Company (QASCO), Messaeid, Qatar**

#### **Marine Ecological Survey**

**Client:** WS Atkins  
**Location:** Port Messaeid, Qatar  
**Dates:** September 2004

Environment Arabia was commissioned by WS Atkins to assist in undertaking a marine ecological survey at Port Messaeid, Qatar. During the survey, a number of survey dives were carried out according to H.S.E diving regulations in addition to the placement and recovery of submerged current and CTD meters. The surveys were conducted as part of an EIA for the expansion of the Qatar Steel Company.



### **Pearl of the Gulf, Qatar**

#### **Marine Ecological Monitoring Survey**

**Client:** United Development Corporation, Qatar  
**Location:** Doha, Qatar  
**Dates:** April 2004



Environment Arabia was commissioned by United Development Corporation (UDC) to conduct an ecological survey within the adjacent environment of the proposed Pearl of the Gulf Development in Doha, Qatar. The



development will require extensive dredging and land reclamation within a region which is thought to contain both seagrass and algal communities. The requirement for an ecological survey was an integral condition of the contract for the development's construction works, as set by the Ministry of Environment. Sediment and Water Quality Assessments were also carried out.

**Durrat Al Bahrain Development  
Rapid Marine Ecological Survey**

**Client:** WS Atkins Global, UK  
**Location:** Hadd Al Jamal, Bahrain  
**Dates:** March 2004 – May 2004

Environment Arabia was commissioned in March 2004 by WS Atkins Global – Bahrain to conduct a Marine Ecological Survey and Assessment. The marine survey was undertaken in the near shore waters along the south-eastern coastline of Bahrain at the Durrat Al Bahrain project site at Hadd Al Jamal. This survey provides supplementary information to Environment Arabia's previous EIA report on the marine environment following dredging and reclamation activities that have taken place in accordance with the initial master plan design. These activities have created two lagoons along the coastline in the project site area. The marine survey was carried out to help understand the changes to water quality (chemistry and temperature characteristics), ecological habitats and marine species in these areas. A proposed borrow area to the south was also surveyed to assess the potential impacts of dredging for fill material.

**Hasik Village Upgrade and Development  
Marine Ecological Survey and Assessment**

**Client:** Khatib and Alami Consulting Engineers, Sharjah  
**Location:** Hasik Village, Sultanate of Oman  
**Dates:** March 2004 - April 2004



Environment Arabia was commissioned in March 2004 by Khatib & Alami Consulting Engineers, Sharjah to conduct a marine environmental scoping survey on the proposed upgrade and development of Hasik village in the Sultanate of Oman. The key aim of the study was to provide an insight into the baseline marine ecology of the study area (particularly the identification of overall ecological sensitivity).

**Island Refuge – Fasht Al Jarim  
Environmental Impact Assessment (EIA)**

**Client:** Special Projects Department, Ministry of Works and Housing  
**Location:** Fasht Al Jarim, Bahrain  
**Dates:** October 2003 – December 2003

Environment Arabia was commissioned to carry out an EIA of an island refuge to be constructed towards the north-east section of Fasht Al Jarim, some 26km off the coast of Bahrain. Intended purely for the use of fishermen, its location was chosen due to its strategic position between the mainland of Bahrain and offshore fishing grounds.

The design of the island would allow for larger boats and dhows to anchor / moor offshore with fishermen being transferred to the island via smaller boats. The main focus of the environmental investigations were the marine and coastal implications of



the dredging and storage of dredged material (i.e. the construction process), and the resulting effect on benthic and other ecology due to the reclamation. Stockpiling and dewatering of dredged material may also pose water and air quality issues as well as potential contaminated soil problems.

### **Manama North Shore Master Plan**

#### **Marine Ecology Survey**

**Client:** Ahmed Abubaker Janahi Architects (AAJA)

**Location:** Bahrain

**Dates:** April 2003

As part of the ongoing and future studies for the strategic development of the north of Bahrain, the significance of existing ecological habitats and their importance within the overall environment of this coastline needed to be scientifically determined. One aim was to assess the ecological significance of the fasht directly to the north and east of the proposed Financial Harbour and King Faisal Corniche, and to ascertain its importance with respect to future strategic developments planned for this area. The study assigned a level of environmental significance to the fasht and recommended specific areas of interest, which would fall into specific categories (e.g. areas suitable for reclamation, areas suitable for dredging, areas to be protected).