Marine Environment Conservation and Management Programs in the Emirate of Abu Dhabi

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Environment Agency- Abu Dhabi
Agency’s Mission on Marine Environment is to:

- Manage
- Protect
- Rehabilitate
- Enhance
- Develop

Fisheries and marine resources and environment in the Emirate of Abu Dhabi, consistent with the principles of sustainable development and subject to allocations and programs established through local and national regulatory processes and policies and international obligations.
Some of the key components of the mission then include:

- Studying the marine biodiversity of the Emirate of Abu Dhabi
- Determining and documenting species abundance and distribution and evaluating their status and the status of their habitats
- Developing and implementing management measures to conserve and protect marine biodiversity and environment as appropriate
Pressing issues towards mission implementation

- Increasing urbanization and coastal development
- Over exploitation of fisheries and marine resources
- Unsustainable land-use practices
- Marine pollution, particularly land-based pollution
- Institutional capacity
Current Marine Species Situation

A. Fish

- Offshore demersal species
- Inshore demersal species
- Offshore demersal species
- Pelagic species
Fisheries Resource Assessment

Demographic investigations
- Length based methods
- Age based methods
  - Growth rates
  - Mortality rates

Biological studies
- Spawning
- Maturity
- Other life history parameters

Yield and absolute biomass estimates
- FLPD
- FRAS
- Icthyoplankton

Gonad Histology
- Population sexual structure
Fisheries Resource Status

Changes in the abundance of groupers (Epinephelus spp.) between 1978 & 2002 in the Arabian Gulf & Gulf of Oman

Note: Numbers in parenthesis show the biomass density in 2002 as a proportion of that recorded in 1978.

Demersal Species Resource Status (by landed weight)

Pelagic Species Resource Status (by landed weight)

Changes in the abundance of groupers (Epinephelus spp.) between 1978 & 2002 in the Arabian Gulf & Gulf of Oman

Note: Numbers in parenthesis show the biomass density in 2002 as a proportion of that recorded in 1978.
B. Endangered Species

- Green turtles forage but do not nest in Emirate of Abu Dhabi waters; Hawksbills both forage and nest on the islands.

- Dugongs, almost all of which occur within Emirate of Abu Dhabi waters make up the second largest population of dugongs in the world after Australia.

- Other species include:
  - Dolphins
  - Several shark species (20 species from 8 families)
1. Sea Turtles

- Estimated foraging turtles (greens and hawksbill) 5700 in 2001 and 5500 in winter 2004

- Stability in the number of nests at around 150 nests expect for 2005 when 217 nests were recorded.
15 turtles tracked between 1998-2006 including collaborative initiatives in Oman and Pakistan
2. Dugongs
Dugong population and distribution

- Dugong population
  - 2185 (Winter 2001)
  - 2925 (Winter 2004)
(based upon survey results)
Critical Marine Habitats

- Mangroves
- Salt marshes
- Seagrass
- Coral reefs
A. Coral Reefs

- A large-scale coral reef map based upon Landsat imagery and ground truthing of over than 1000 control points has been produced.
B. Mangroves

- The bulk of the mangroves in the United Arab Emirates (approximately 85%) occur in the Emirate of Abu Dhabi.
- Represented by one species *Avicennia marina*
- These mangroves cover an area of approximately 40 km²
C. Coastal wetland habitats

- Coastal wetlands survey and mapping is undertaken as part of the research and monitoring program on sensitive habitats.

- 3 seagrass species *Halodule uninervis*, *Halophila ovalis* and *Halophila stipulacea*.

- Salt marshes show different zonation patterns depending on whether they are associated with mangroves or not.

- Marine (macro) algae form another important component of the coastal wetland ecosystem in the Emirate.
  
  - So far have documented and mapped:
    - 16 species of Chlorophyta from 5 families,
    - 26 species of Phaeophyta from 8 families
    - 63 species of Rhodophyta from 15 families
A. Legal Frameworks

Priorities include:

- Conservation and sustainable utilization of fisheries and marine resources
- Protection of biodiversity in particular pertaining to endangered species and habitats as well as rare and fragile habitats and ecosystems
- Controlling pollution from ships, land based sources and sea-bed activities

Ensured by way of a number of legislations including Federal laws 23 and 24, Emirate–level legislations (Law 21 on Waste management, several decrees on fisheries, EIAs)

UAE is also signatory to CITES (1990), CBD (1999) and RAMSAR (2007)
B. Specific measures to protect Sensitive Habitats

1. Establishment of Biosphere Reserves and Protected Areas to protect essential habitats (Coral reefs, seagrass beds and mangroves)

- One Biosphere Reserve (Marawah Marine Biosphere Reserve) under the UNESCO’s MAB program
- 2 Marine Protected areas at Al Yasat (482 km²) and Busiyyeyif (282 km²)
Marawah Marine Biosphere Reserve Zones

Declared Coordinates

| P1  | 52.96E; 24.73N |
| P2  | 53.09E; 24.73N |
| P3  | 53.44E; 24.63N |
| P4  | 53.48E; 24.43N |
| P5  | 53.95E; 24.32N |
| P6  | 54.01E; 24.06N |
| P7  | 52.96E; 24.10N |

Total Area
4255 Sq. Km
The Other Marine Protected Areas
B. Specific measures to protect Sensitive Habitats

2. Preparation of Conservation and management plans for coral reefs and wetlands

3. Promoting best management practices (sustainable fisheries, land-use management)

4. Establishment of 8 permanent coral reef monitoring stations

5. Awareness programs

6. Promotion of remediation and support infrastructure programs
Conservation and Management

C. Protecting biodiversity with special emphasis on endangered species

1. Conservation and Management plans for dugongs and sea turtles (aimed at protection of species and habitats)

2. Capacity building, education and awareness programs with schools and the public

3. International and regional cooperation to protect species and address transboundary environmental issues
Protecting biodiversity
D. Promotion of sustainable development

1. Better fisheries management practices (including gear modifications, reduction of fishing capacity and measures for rehabilitation of overexploited species)

2. Oil spill contingency planning (EAD is part of oil spill response team with clear ecological role)

3. Implementation of management practices to reduce land-based sources of pollution (Reception facilities, Marine debris clean-up programs, establishment of effluent limits, marine water quality monitoring)
Promotion of sustainable development

Farsh juvenile retention by trap type

\[ n = 49 \]
\[ n = 143 \]
\[ n = 251 \]
\[ n = 566 \]

- Trap type
- Juvenile retention (%)
Building Partnerships

- Development of partnerships at all levels is a key policy towards achieving sustainable development of the Emirate’s coastal and marine environment
  - Locally (with stakeholders such as fishermen, oil companies, NGO groups)
  - Regionally (Gulf countries, MoUs, UN bodies {MEPA, ROPME})
  - Internationally (CMS; MoUs)
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