

## **EGYPT'S BIODIVERSITY. OPPORTUNITIES AND CONSTRAINTS.**

A Report to the United States Agency for International Development, Environment Office, Cairo, Egypt.  
Prepared by Nicholas Winer. October, 1999.

### **SITUATION OF BIODIVERSITY IN EGYPT**

Egypt has a surprisingly rich fauna and flora. It's major desert plain and montane systems contain a varied set of habitats: the Nile Valley, oases, brackish and saline wetlands, and two distinct marine environments. Egypt is connected to the Mediterranean world and that of sub-Saharan Africa by way of the Nile valley, and to the tropical Indian Ocean through the Red Sea. Of the vertebrate fauna, birds are the most diverse and prominent due to Egypt's position as an important stop over on a number of migratory routes.

Habitat destruction remains the largest threat to biodiversity. Because of the barren nature of so much of Egypt, plants and animals are generally restricted in their distribution to oases, wadis, marshes, mangroves and the Nile system. Species density therefore tends to be high in localised area while remaining low for the region or country as a whole. Much of this habitat destruction is a function of economic development. The Government is promoting massive investment on two fronts; firstly moving people and industry out of the Nile valley, and secondly promoting the rapid development of coastal zones for tourism development. The demographic and economic justifications for this are clear, but strategies to mitigate their environmental impact remain largely elusive.

The challenges of rapid economic development need to be aligned to the growing awareness of the importance of conservation. Along the Red Sea Coast large scale development has already taken place. There is now evidence of a new awareness that this development is unsustainable without the conservation of the coral reefs upon which tourism revenues are based. This new understanding, evidenced by the support of the Ministers of Environment and Tourism, and the Red Sea Investor's Association for an expanded Red Sea Protectorate, has sparked re-invigorated economic and political interest in conservation.

Egypt may not have the high visibility fauna of central, east and southern Africa, notwithstanding the small population of cheetah in the Quattara depression; but it does have a unique historical and cultural setting which, allied to the diversity of its marine, desert and riverine eco-systems, offers new opportunities for significant increases in national revenues as a direct result of the conservation of biodiversity. Park entrance fees are being collected in Sinai. Fees for visiting the southern Red Sea Islands are also being collected. Sound foundations are therefore being laid for developing market based systems that will ensure that biodiversity conservation is not seen as a luxury but as an intimate part of Egypt's national economic development.

Egypt hosts 262 higher species found nowhere else on earth. About 24% are classified as threatened, including 19 plants that are endangered (the highest category of risk). 53 endangered species of Fauna are also found in Egypt. These endangered species represent a priority for conservation measures such as habitat restoration, protected areas and special land management schemes. As habitat destruction continues the monitoring of its impact on these endemic and endangered species becomes of increasing importance.

### Species richness

Species group	Total species richness	Number of species endemic to Egypt	Number of species shared with other countries
Mammals	102	7	95
Birds	153	0	153
Reptiles	83	0	83
Amphibians	6	0	6
Higher plants	2,066	70	1,996

Source: World Conservation Monitoring Centre, Cambridge, UK

### *Egypt is a party to the following international treaties and conventions:*

Egypt has historically been a willing signatory to international and regional agreements in favor of biodiversity and conservation issues in general. Article 151 of the Egyptian Constitution states that any international convention to which Egypt becomes a party automatically becomes a part of Egyptian law and takes precedence over related domestic legislation. Despite its welcome and comprehensive listing of international obligations in favour of biodiversity; Egypt has a poor record in implementation. It's failure to establish appropriate national structures for the implementation of its obligations under CITES has resulted in a threat to put Egypt in non-compliance creating threats to trade with the USA by virtue of the US Endangered Species Act. Measures to avoid this were successfully taken in 1999. (See Page 6 - Areas of Progress)

### Global conventions

International Tropical Timber Agreement (ITTA, Geneva)	1993
Convention on Biological Diversity (CBD, Rio)	1992
United Nations Convention on the Law of the Sea (UNCLOS, Montego Bay)	1982
Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn)	1979
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1973
Convention concerning the Protection of the World Cultural and Natural Heritage (WHC, Paris)	1972
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar)	1971
International Plant Protection Convention (Plant, Rome)	1951

## Regional conventions

Protocol concerning the Mediterranean Specially Protected Areas	1982
Regional Convention for the Conservation of the Red Sea and of the Gulf of Aden Environment	1982
Convention for the Protection of the Mediterranean Sea against Pollution	1976
African Convention on the Conservation of Nature and Natural Resources	1968
Protocol of the International Convention for the Regulation of Whaling	1956
Agreement for the Establishment of a General Fisheries Council for the Mediterranean	1949
International Convention for the Regulation of Whaling	1946

### *Key steps taken to strengthen biodiversity:*

At the national level there are two pieces of legislation which provide for sweeping powers in favour of the environment. Implementation again remains an area that has not fully lived up to the responsibilities enshrined in the law. Implementation requires clear policy guidelines for supervision and enforcement, backed up by the necessary human and financial resources.

- Law 102/1983: provides for the establishment of protected areas. There are currently 22 Protectorates covering 80,000km<sup>2</sup>, or about 8% of the country.

### Protected areas

Name	Date	Area km <sup>2</sup>
Ras Mohamed	1983	480.00
Zaranik	1985	230.00
El Ahrash	1985	10.00
Elba	1986	35,600.00
Saluga and Ghazal	1986	0.25
El Omayed Biosphere Reserve	1986	700.00
Burullus	1988	1,100
St Katherine	1988	5,750.00
Ashtum El Gamil	1988	35.00
Wadi El Rayan	1989	710.00
Hassana Dome	1989	1.00
Lake Quran	1989	250.00
Maadi Petrified Forest	1989	7.00
Wadi Allaqi	1989	30,000.00

Abu Galum	1992	500.00
Wadi El Assiuti	1992	24.00
Sannur Cave	1992	4.00
Nabq	1992	600.00
Taba	1997	2,600.00
Nile Islands	1998	160.00
Red Sea Islands	1998	100.00
Wadi Digla	1999	60.00
		<b>Total: 78,920.25</b>

Note: 1] Adapted from :Towards Establishing a Network Plan for Protected Areas in Egypt, Sherif Baha El Din, 29 June, 1998 and, the Directory of Important Bird Areas in Egypt, Sherif Baha El Din , Birdlife International, 1999.

2] See Map

- Law 4/1994: which provides the Egyptian Environmental Affairs Agency [EEAA] with extensive powers to monitor environmental impacts and ensure compliance with standards set by EEAA. Although the law focusses heavily on pollution abatement it does provide a significant enhancement to wildlife conservation powers.
  - i. Article 28 forbids the hunting, shooting, catching, possession, transport and sale of wild birds and other animals listed by previous Ministry of Agriculture decrees, or by international conventions to which Egypt is a party. Violators faces fines of between £E200 to £E5,000 plus loss of the trophy and equipment associated with its capture, transportation etc.
  - ii. The executive regulations also specify the requirements for hunting licences.

In support of Law 4 and Law 102, in respect of biodiversity conservation, USAID and the GoE have agreed to work on:

- i. Marine protected areas management and conservation;
  - ii. Preventing and/or reversing the destruction and/or degradation of marine ecosystems;
  - iii. Improving solid waste management in tourist development areas;
  - iv. Improving water and energy use;
  - v. Improving site planning for tourist development sites.
- It established a National Biodiversity Unit in 1992, with support from UNEP, and published its National Biodiversity Action Plan in 1997. This plan was formalised in 1998 as “Egypt: National Strategy and Action Plan for Biodiversity Conservation”, which lays out 11 national programs of action. Progress on implementation can be found on Page 7. These cover:

- i. institutional development,
  - ii. protected area development,
  - iii. national biodiversity inventory and monitoring,
  - iv. hunting,
  - v. heritage resources management,
  - vi. compliance with international conventions,
  - vii. public awareness,
  - viii. wetlands management,
  - ix. marine and coastal management,
  - x. arid lands management, and
  - xi. nature based tourism
- The Global Environment Facility funding, through the World Bank, has produced significant improvements in data through a multi-party (Tourism Development Authority, EEAA, Governorate of the Red Sea) approach to coastal zone mapping and planning. It has produced extensive reports advocating careful zoning of coastal areas and has formed the basis of much of EEAA's work with USAID on zoning options for an expanded Red Sea marine park.

## **AREAS OF PROGRESS**

### **1. CITES.**

During 1999 a number of steps have been taken to strengthen Egypt's capacity to fulfill its obligations under CITES. (The official statement is attached as Annex 1).

- i. Ministry of Agriculture decree 843/99 established the appropriate committees and their chairmen. (Annex II).
- ii. Ministry of Agriculture decree 1095/99 established the committee membership and their terms of reference. (Annex III).
- iii. Ministry of Agriculture decree 1150/99 formalizes Egypt's concurrence with CITES requirements. (Annex IV).
- iv. Customs Procedures Circular 17/99 dated 26<sup>th</sup> September informs Customs officials of the coming into force of Egypt's signing of the CITES Convention. (Annex V).

Responsibility for CITES was transferred in 1999 from EEAA to the Ministry of Agriculture. EEAA is represented on the National Committee by Dr Mohamed Ibrahim Mohamed, The Deputy Director of the Nature Conservation Sector. EEAA has been responsible for producing CITES reports until this year. The latest CITES annual report is attached (Annex VI). EEAA also publishes a list of species in which trade, hunting or capture is banned by Ministerial decree cross referenced with its CITES listing. (Annex VII). In addition EEAA publishes lists of species cross-referenced to the numbers requested for live capture, the number of captures approved and the number of companies submitting such requests. Checklists have been published for Reptiles and Amphibians (Annex VIII), and for Mammals (Annex IX).

Neither the flora nor marine species are sufficiently documented to allow capture permits to be issued.

## 2 NATIONAL BIODIVERSITY ACTION PLAN

Considerable progress has been made in the implementation of certain key areas of the National Action Plan; although not all areas are equally represented and some critical areas such as the issuance and control of hunting permits are yet to see effective implementation; there is a growing sense that the implementation of conservation based development is being given increased importance; at least within EEAA, the Ministry of Tourism's TDA (Tourism Development Authority) and the Ministry of Agriculture.

- i. Establishing CITES management authorities. See above. This supports National Biodiversity Action plan (NBA) objective vi. of improving compliance with international conventions.
- ii. With support from the German Government, The Ministry of Agriculture is in the process of establishing a National Gene Bank for the conservation of plant genetic resources. Envisaged as primarily a seed bank, it is also intended to host tissue culture studies and propagation. It will co-ordinate and expand the existing de-centralised seed banks. EEAA has a consultative role in the establishment and management of the gene bank. This supports NBA objectives iii. and v. of national biodiversity inventory and monitoring, and heritage resources management.
- iii. Global Environment Facility funding of \$2,884,000 has been received (27<sup>th</sup> September, 1999) to allow Egypt to participate in the regional Conservation of Wetland and Coastal Eco-systems in the Mediterranean programme. UNDP/GEF project EGY/97/G33/A/IG/99. This is a multi-country project that includes Albania, Egypt, Morocco, the Palestine Authority and Tunisia. The project in Egypt is targeted towards the conservation of biodiversity at the 230km<sup>2</sup> Zaranik protectorate in North Sinai; the 1,100km<sup>2</sup> Ramsar registered protectorate of Burullus in the north western Delta; and towards the expansion of protected areas in the Matruh governancy with activities centred on the 700km<sup>2</sup> biosphere reserve of the El Omayed protectorate. This supports the NBA objectives vi. and viii. of compliance with international conventions and wetlands management.
- iv. Protected areas are being expanded with the assistance of donor projects principally from USAID (Red Sea), the EU (Sinai) and Italy (wadi and oases systems). All these programs of assistance combine protected area management with training and institutional strengthening. In 1998 a draft consultative document was produced by the Nature Conservation Sector urging the creation of an additional 19 Protectorates covering a further 99,800km<sup>2</sup>. (Towards Establishing a Network Plan for Protected Areas in Egypt, Sherif Baha El Din, 29 June, 1998) However this includes a proposal

for a Red Sea Park of 150km<sup>2</sup>, 100km<sup>2</sup> of which are already protected. This proposal has subsequently been revised to encompass 24,000km<sup>2</sup>, bringing the new proposed and existing total to 202,570.25km<sup>2</sup>; or 20.5% of the country

This proposal, for an expanded Red Sea Marine Park, has been formally endorsed by the Minister of Tourism, the Red Sea Investors Association and the Governor of the Red Sea. It has been forwarded to the Office of the Prime Minister by EEAA as an urgent action item. Supporting documentation has been prepared with USAID assistance. This supports the NBA objectives i. and ii. of institutional development and protected area development. The areas proposed for protection, but not yet legally established are as follows:

### Proposed protected areas

Name	Area Km <sup>2</sup>
Expanded Red Sea Marine Park	24,000.00
Sabkhat Ras Sukheir	75.00
Ras El Hekma	150.00
Showela	225.00
Quesima	400.00
Gebel Maghara	900.00
Girafi	1,100.00
Salum	1,450.00
Um Dabadib	2,300.00
El Qasr	3,700.00
Um El Ghuzlan	3,900.00
Kurkur and Dungul	4,200.00
El Galala	4,300.00
El Shayeb	4,300.00
Hamata	4,300.00
White Desert	5,800.00
Wadi Qena	5,900.00
Quattara	22,900.00
Gilf Kebir	33,700.00
	<b>Total: 123,650.00</b>

Note: Adapted from :Towards Establishing a Network Plan for Protected Areas in Egypt, Sherif Baha El Din, 29 June, 1998.

- v. Following a three year process of seminars and consultancies the Tourism Development Authority has published guidelines that allow commercial developers to opt to establish eco-lodges rather than traditional hotels. These are designed to minimise environmental impacts and promote eco-tourism. This supports NBA objective xi. to develop nature based tourism.

## **POSITIVE IMPACTS OF USAID FUNDED PROGRAMS**

USAID's funding under the Environmentally Sustainable Tourism Project (EST), which continued until August 1999 under the Policy Management Group's (PMG) transitional activities, has helped to firmly establish a conservation basis for development on the Red Sea:

- The EEAA, funded by USAID, has installed over 480 moorings using the services of HEPCA, a Red Sea based NGO providing mooring installation and maintenance services. These moorings are a substantial investment in a long term management strategy for the conservation of the Red Sea's coral reefs. The impact of these moorings is tracked through a monitoring program, following IUCN guidelines. 1998's survey demonstrated that the 11 monitored sites around Hurghada showed an 8.8% increase in coral coverage since 1996; and that the 10 monitored sites around Safaga showed a 3.58% increase in coral coverage over the same period. (See Annex X).
- The EEAA has expanded its operational presence on the coast and now has two offices on the Red Sea. The first in Hurghada and a second at El Qesir. Although the offices are funded by USAID the EEAA is now financing accommodation at both sites. The EEAA has recently approved an increase in Ranger numbers to 20 on the Red Sea coast, greatly expanding patrolling and monitoring capabilities.
- Three short range patrol boats have been delivered to EEAA to aid effective patrolling and supervision. The Rangers have an active program of patrolling to check for misuse of moorings and violations of Law 102. These violations are forwarded to the judicial system or the Coast Guard depending on the nature of the infringement.
- Extensive skills training has been provided for the Rangers, both on site and in conjunction with the EU's South Sinai program. The EST/PSU (The Program Support Unit of the Egyptian Environmental Policy Program) has on its staff one of Egypt's most highly qualified diving instructors who provides continuous dive training and equipment maintenance support to the Rangers.
- Steps are being taken to establish a management plan for the proposed expanded marine park. Support has been given to EEAA to develop documentation to justify the formal declaration of a greater Red Sea Marine Park. Work has also begun on developing zoning maps for the proposed park using a consultative process to create consensus on zones and the limitations



to be imposed on usage. Once both of these measures are formally approved and in place the park's management requirements will become much clearer and future resource needs can be more clearly elaborated. The zoning exercise also creates the opportunity for reviewing available options for the sustainable financing of the park by way of concession lease fees or other charges on the private sector for access and use.

- The Minister of Tourism and the Red Sea Investor's Association have both called for the creation of an expanded Red Sea Marine Park demonstrating that a clear linkage has now been made between a sustainable tourism industry and the conservation of the resources that tourists visit. This support is of great importance and will help ensure that the consultative process designed to lead to the zoning of the new Park will have a meaningful interaction with the principal commercial tourism operators.
- A manual on Best Practises for coastal tourism developers has been produced and is being promulgated through a series of seminars. These seminars will provide greatly increased awareness of issues in environmental planning and engineering. They are to be followed up by an enhanced program of environmental site monitoring and environmental impact assessment review.
- A manual on Eco-tourism and guidelines for opening Eco-Lodges have been produced to allow for minimal impact tourism development in fragile areas. The check list for developers allows for a completely new approach to site development. The emphasis is on local building materials, local building traditions, on demonstrable links between the site and the local environment incorporating interpretation facilities and local guides.

## **EXPECTATIONS FROM CURRENT USAID PROGRAMS.**

On September 1<sup>st</sup>, 1999 USAID and the Government of Egypt formally launched the Egyptian Environmental Policy Program. This new program is designed to provide considerable strengthening to initiatives already undertaken, and to transform existing knowledge and experience into new policy initiatives. In areas that directly affect biodiversity four policy objectives have been agreed. These are:

- Objective 12: To “**provide protection for the Egyptian Red Sea coral reefs, islands, and linked ecosystems of importance**”. The achievement of this objective will provide for an expanded, financially sustainable, and fully operational Red Sea Protectorate. This in turn will lead to measurable stabilization and improvement in the health and condition of Red Sea coral reefs and coastal habitats. By protecting the natural resource base, the Red Sea tourism sector's ability, both now and into the future, to provide jobs, economic returns, and improvements in the quality of life on a steady, sustainable basis rather than on a boom-and-bust cycle will be greatly enhanced.

- Objective 13: That “**EEAA (The Egyptian Environmental Affairs Agency) encourages environmentally sustainable development of the Red Sea coast through an improved EIA process**”; and
- Objective 14: That the “**Environmental policy monitoring capacity within the TDA (Tourism Development Authority) is strengthened**”. Achieving objectives 13 and 14 will put into place environmental safeguards to eliminate the practice of coastal alterations by new developments which threaten fringing reefs and mangroves; and affect the manner in which coastal property along the Red Sea coast is designed, constructed, and managed, will be improved. These results will have a direct impact on the sensitive coastal habitats necessary to the continued health of the Red Sea coral reefs. Furthermore, the Red Sea tourism sector’s ability to provide employment, economic returns, and improvements in the quality of life on a steady, sustainable basis will be greatly enhanced when the construction and siting of new tourism facilities are better managed and planned.
- Objective 15: That “**TDA strengthens its capacity to develop and disseminate the Best Practices and other environmental programs intended for investors and developers through education and awareness programs**”. Achieving this objective will increase the amount of environmentally sustainable tourism developments on the Red Sea coast. The establishment of Environmental Monitoring and Policy Implementation Units at TDA will help to decrease further degradation of the key eco-systems supporting Egypt’s coastal biodiversity, through the development of appropriate policies and practices for the use of land and coastal waters.

These activities are also the biodiversity corner stones of the Gore/Mubarak sub-committee III, and will support the Government’s own stated objective “to incorporate the environmental dimension into our political, economic and production plan.” (President Hosni Mubarak, March 15<sup>th</sup>, 1997. ‘Egypt and the 21<sup>st</sup> Century’). This assistance is therefore timely.

It is expected that the successful realisation of EEPP will take forward key areas of the National Strategy and Action Plan for Biodiversity Conservation:

- i. Institutionally EEAA’s Protectorates Department will be greatly strengthened through the creation of a field structure along the Red Sea coast, as will the TDA’s through an improved capacity to monitor and supervise development activities.
- ii. The expansion of protected area development, by increasing the Red Sea’s protected area from 100km<sup>2</sup> to 24,000km<sup>2</sup>, supports the Government’s commitment to increasing its protected area estate. It also provides very direct under-pinning to ensuring EEAA’s capacity to monitor and supervise activities thereby ensuring the integrity of its expanded protected area status.
- iii. An enhanced management program will provide new data for national

- biodiversity inventory and monitoring, and expand the areas that EEAA will have under formal and active marine and coastal management.
- iv. Better management and improved inventory data will provide the Ministry of Agriculture with the basis to make informed decisions with respect to its newly strengthened commitment to CITES thus improving its compliance with international conventions.
  - v. A conservation education and public awareness program will broaden public understanding of the role of protected area development and its links to sustainable tourism and livelihoods.
  - vi. The TDA's promotion of best practices will support nature based tourism by promoting the concept of eco-lodges and the expanded park will provide increased opportunities for sustainable water based recreation.
  - vii. The promotion of best practices will be enhanced by the improved capacity to monitor and supervise coastal development. This will have a noticeable impact on future developments and ensure that set backs are adhered to, that land filling is only done in accordance with EIAs and that reefs and inlets are undamaged. It is unlikely to be able to alter the existing legacy of unplanned and unsupervised development where this has already damaged fringing reefs and other delicate coastal ecosystems.

#### **POTENTIAL TECHNICAL AREAS FOR FUTURE USAID PROGRAMS.**

Some potential areas for future involvement would logically revolve around consolidating gains already made. The central weakness in Egypt's strategy to conserve its biodiversity remains its poor implementation record. This gap between policy and practise can be narrowed through a broad ranging set of interventions which takes note chiefly of implementation deficiencies. In the first three of the suggested interventions USAID has in place strong and vigorous programming actions which are concentrated on certain geographic locations or sub-sets of institutions. USAID's involvement in these areas could be both deepened and strengthened. In the fourth area increasing environmental concern will center on the availability of fresh water for both human and biodiversity requirements. USAID is well placed to address this looming crisis having begun the process of reviewing water requirements in national and regional settings in other locations.

##### 1. CITES awareness.

For the implementation of CITES to be effective at the national level it requires that all players dealing with the import and export of plants, animals and their derived products have a good knowledge of CITES listed species and their trophy parts. Effective implementation will need an education campaign for customs officials in ports and harbours; for Coast Guard stations; for EEAA's Rangers; for fishermen, recreational hunters and tourists. It will need public display information at all border posts and airports. The evidence of open trade in listed species can be seen by the casual visitor to Cairo in the Nile crocodiles being brought up from Aswan and freely sold and the public trade in rare birds at the Dar El Salaam Friday market; a market listed as a tourist attraction in many guides to Egypt.

## 2. Institutional strengthening.

EEAA, as a young institution, needs support to review the way in which it delivers its mandate. A number of donors are currently supporting institutional strengthening (USAID, DANNIDA, CIDA, EU) as key components of their project assistance. These activities are focussed on strengthening the existing structures of the Agency. A review of the present divisional organisation of EEAA that takes note of the operational nature of the National Conservation Sector and its particular needs is urgently called for. Without an expanded structure with clear operational roles defined for the NCS, it will be hard for EEAA to meet its growing obligations in this area.

The broad nature of these requirements can be seen from a brief listing of some of the current obligations that the Nature Conservation Sector of EEAA must struggle to meet. There are insufficient staff at the NCS to meet the following needs:

- i. Basic patrolling and law enforcement in all protected areas.
- ii. Management of EIA reviews; provision of scientific monitoring, and setting biological limits for live capture and hunting quotas.
- iii. Monitoring compliance and generating data regarding Egypt's international obligations under the conventions it has signed
- iv. Developing and mounting a national conservation education program
- v. Developing the types of liaisons that strengthen NGO programs and create effective public-private partnerships.

Current USAID support will begin addressing these deficiencies, but may not be able to provide sustainable solutions at the national level, since current efforts have a Red Sea based regional focus.

## 3. Market based financing methods for sustaining the Protected Area Network.

As the country's protected area network grows and EEAA begins to more assertively manage its estate, the demand for public access will grow, and so then will the costs of servicing this access and ensuring that its conservation status is effectively maintained and managed. A successfully managed network of protected areas will be a drain on public finances. As these areas have a high conservation value ways need to be sought to ensure that these conservation values can be translated into economic returns. There is a need for a review of opportunities for setting differential gate fees, for establishing leased concessions and for developing eco-lodges in and around protected areas. This review would take into account current donor experiences in the Red Sea and Sinai, the status of the Environmental Protection Fund and the Government's privatisation program.

## 4. Conservation of inland water systems.

The maintenance of Egypt's inland water systems are critical not only to the maintenance of Egypt's biodiversity but also to human development. The critical water systems are:

- i. The Nile, its islands and delta
- ii. Fresh water oases
- iii. Brackish and Saline oases

Each of these systems are currently threatened by human development of one sort or another. Although there may well be scattered examples of oases yet to be affected by the expansion of human activity, these will be exceptions. There are a number of reasons for seeking to protect these ecosystems:

- i. The Nile is Egypt's lifeline. Its ability to satisfy its water requirements from The White and Blue Niles is an issue of regional importance that has often affected relations with Ethiopia and Sudan. Increasing domestic, industrial and agricultural demands both in Egypt and in the source countries of Ethiopia, Sudan and Uganda are getting to have an impact on regional agreements. Down river the levels of pollutants discharged into the Mediterranean are of concern to the eastern Mediterranean countries.
- ii. The islands and oases represent unique habitats in a predominantly arid environment. Their preservation is the key to the health of Egypt's biodiversity and to the long term viability of many avian migrations.

**NOTES:** (External sources consulted:)

1. The WCMC internet site at: <http://www.wcmc.org.uk/cis/>
2. Towards Establishing a Network Plan for Protected Areas in Egypt. Draft Consultative Document. Sherif Baha El Din, EEAA, Cairo. 1998.
3. Directory of Important Bird Areas in Egypt, Sherif Baha El Din , Birdlife International, 1999.
4. Threats to Biodiversity in Arab Countries. Samir Ghabbour. In Reviews in Ecology. Desert Conservation and Development. Edited by Barakat and Hegazy. Cairo. 1997.
5. Egypt: National Strategy and Action Plan for Biodiversity Conservation. EEAA. 1998.
6. Conservation of wetland and coastal ecosystems in the Mediterranean region. UNDP/GEF project document EGY/97/G33/A/1G/99.
7. Dr Essam El Badry - EEAA  
Dr Mohamed Ibrahim Mohamed - EEAA  
Mindy Baha El Din - private consultant
8. Egyptian Environmental Policy Program, Results Package, USAID/Egypt. November 3, 1998.