ENVIRONMENTAL ASSESSMENT OF MARINE NATURAL RESOURCES IN THE GULF OF SALLOUM MARINE PROTECTED AREA

MedMPA Network Project

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Environmental assessment of marine natural resources in the Gulf of Salloum Marine Protected Area

MedMPA Network Project

Study required and financed by:

MedMPA Network Project

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EXECUTIVE SUMMARY

The present study has been prepared under the cooperation agreement between the Egyptian Environmental Affairs Agency (EEAA) and the Specially Protected Areas Regional Activity Centre (SPA/RAC) in the field of conservation of marine and coastal biological diversity in the Mediterranean marine part of Egypt. It has been elaborated within the framework of the regional project "Towards an ecologically representative and efficiently managed network of Mediterranean Marine Protected Areas (MedMPA Network Project)", financially supported by the European Union.

The MedMPA Network project aims at improving the effective conservation of important Mediterranean features of coastal and marine biodiversity through the establishment of a network of marine protected areas (MPAs) in the region in accordance with the Barcelona Convention Protocol concerning the Specially Protected Areas and biological diversity in Mediterranean (SPA/BD Protocol). This would effectively expand the existing network to include Mediterranean priority areas and assist countries in implementing priority elements of the Strategic Action Programme for the Conservation Biological diversity in the Mediterranean region through providing technical and financial supports to enable activities at national, sub-regional and regional levels.

The preparation of this study «Environmental assessment of marine natural resources in the Gulf of Salloum Marine Protected Area» comes within the framework of achieving the requirements of preparing a management plan for the Salloum MPA, and integrating it with the «Socio-Economic Assessment Study» which has already been prepared in the MedMPAnet project, to include all the social, economic and environmental factors of the protected area in the management plan of the MPA, then present it to the different stakeholders in order to involve them in the preparation and adoption of the management plan at the national level.

The main objective of this study is to implement a rapid assessment for the current status of the marine natural resources in Salloum marine protected area through a 10-day field survey. It included a review and update of the lists of biological species, a topographic characterization, and an identification of the threats facing the MPA. This led to establish channels of communication between the MPA and the local community by involving them during the preparation of this study.

The Salloum MPA was declared in the 27th of February 2010 as the first MPA on the Mediterranean in Egypt, in accordance to the Egyptian law for natural protectorates (102/1983) by prime ministerial decree no.533/2010 upon the request of the minister of Environment. Noteworthy the various legal statuses, at national level, in favour to the protection of the site, such as: Law 4/1994 for the Protection of the Environment, amended by Law 9/2009, and Law 124/1983 regulating fisheries.

This field survey was carried out from 1 to 10 December 2017. The study required several stages, including coordination with the relevant national agencies, field survey, and interviews with the different stakeholders.

A number of marine species were recorded. The survey included coastal and marine plants, algae, fish, marine invertebrates, aquatic birds, stranded marine animals, etc. to update and compare with the species recorded in the previous studies, taking into account the climatic conditions during the survey period and the security situation of the surveyed areas. The covered long transect in survey were in average distance of 1000 m from the coastline in both sandy and rocky bottom.

The study showed that the Gulf of Salloum is exposed from the landside to many of the risks that threaten the area and its biodiversity, in particular: unregulated hunting activities, and irresponsible coastal and urban development. The pollution with solid waste from land sources is currently considered one of the major critical factors affecting the environment and the resources of this area.

It is important that the Salloum Gulf area, including its marine and coastal ecosystems, must be managed to insure the implement of the conservation and sustainability principles. This requires the provision of human and financial resources needed to achieve the main objective of Salloum MPA declaration and to protect the cultural heritage of the local community as well as the establishment of basic infrastructure for field work within the MPA.

More recommendations to ensure the well management of the area could be: implement of a periodic monitoring programme for the MPA; raise the capacity of the rangers and environmental guarders of the northern protected areas in the field of marine monitoring and diving activities; further implement programmes for the protection of marine biodiversity and habitats components in the Egyptian Mediterranean water and continue the cooperation with SPA/RAC.

CONTENT

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1. INTRODUCTION

This study was prepared within the framework of cooperation between the Egyptian Environmental Affairs Agency (EEAA) and the Specially Protected Areas Regional Activity Center (SPA/RAC) in the field of conservation of marine and coastal biological diversity and marine protected areas in the Mediterranean Sea, and under the Memorandum of Understanding N°01/MedMPA Network/2017 on preparation of an environmental study to assess the marine natural resources in the Gulf of Salloum Marine Protected Area (MPA) as one of the requirements for the preparation of a management plan for this MPA, through the support of the regional Project «Towards an ecologically representative and efficiently managed network of Mediterranean Marine Protected Areas» (MedMPA Network Project) financed by the European Union (EU).

The project builds on the achievements of the Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (MedPartnership project), including the Regional Project, executed by SPA/RAC (2010 - 2015), for the Development of a Mediterranean Marine and Coastal Protected Areas Network by boosting the MPAs Creation and Management (MedMPAnet project), financed by the EU, AECID and FFEM. It contributes to the implementation of the Barcelona Convention and its Specially Protected Areas and Biological Diversity (SPA/BD) Protocol.

The MedMPA Network Project aims to continue the effective conservation of important regional features of coastal and marine biodiversity through the establishment of a network of Mediterranean marine protected areas in accordance with SPA/BD Protocol, which would effectively expand the existing network of marine protected areas in the Mediterranean Sea to include Mediterranean priority areas and to assist participating countries in implementing priority elements of the Strategic Plan for the Conservation of Mediterranean Biodiversity (Strategic Action Plan for the Conservation of Biodiversity) through providing financial and technical supports to enable activities at national, sub-regional and regional levels.

The preparation of this study «Environmental assessment of marine natural resources in the Gulf of Salloum Marine Protected Area» comes within the framework of achieving the requirements of preparing a management plan for the Salloum MPA, and to integrate it with the «Socio-Economic Assessment Study» which has already been prepared in the MedMPAnet Project, to include all the social, economic and environmental factors of the protected area in the management plan of the MPA, then present it to the community and stakeholders in order to involve them in the preparation and adoption the management plan at the national level.


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2. AIM OF THE STUDY

The main objective of this study is to implement a rapid assessment for the current status of the marine natural resources in Salloum marine protected area through a field survey, which will be helping to complete the preparation of Salloum Marine Protected Area Management Plan, through reviewing and updating the lists of biological species, setting up a topographic characterization, and identifying the threats facing the MPA, then to compare information with the proposal of the declaration (2009), as well as to establish channels of communication between the MPA and the local community by communicating with them and involving them during the preparation of this study.

Teamwork

Integrated working team was formed, includes:

1. Prof. Mustafa M. Fouda, Advisor for Environmental Minister of Biodiversity and Marine Environment
2. Dr. Atef Limam, Project Officer - MedMPA Network (SPA/RAC)
3. Dr. Ahmed Salama, Head of Nature Conservation Sector (NCS)
4. Dr. Khaled Allam, Head of Central Department of Biodiversity
5. Mr. Mohamed M. Issawi, General manager of the Northern Protected Areas
6. Dr. Mohamed Samah Anter, manager of Geology Department
7. Mr. Mohamed S. Abd El-Warith, marine environmental Researcher (NCS, EEAA)
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12. Mr. Abdel-Wahab A. Abdel-Wahab, environmental Researcher (NCS, EEAA)

During the field work, some of the local community were involved such as:

1. Sherif Heliou – guide
2. Haj Shafii Sayad – guide
3. A driver and a cook

Figure 1. Some of the member team who participated in the assignment.

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3. METHODOLOGY

This study was prepared through implementation of a 10-day field survey from 1 to 10 December 2017 for the rapid assessment of marine natural resources within the MPA. The preparation of the study was carried out in several stages, including:

A. Coordination

Coordination with all relevant national agencies; administrative, political, security and military to obtain needed permissions and arrangements for approval the supports of SPA/RAC and the field work in MPA, as follows:

1. Ministry of Foreign Affairs,
2. Ministry of interior,
3. National Security Authority,
4. The General Secretariat of the Ministry of Defense,
5. Naval forces in both Alexandria and Matrouh,
6. Relevant Border guards offices,
7. Projects Agency of National Services,
8. Head of western Military Forces,
9. Head of intelligence offices and security of border guards,
10. General Authority for Fisheries Resources Development,
11. Egyptian Authority for Safety of Maritime Navigation.

B.Review previous studies and preparing for field work

1. Collect and review the available studies and researches related to the Salloum Gulf, and lists of marine species in the Mediterranean,
2. Methodology and scenarios of work determined in different habitats (rock and sand), collect samples, photos and identify biological species in their natural environments.
3. Review proposal study of MPA declaration (2009).
4. Review the study of socio-economic assessment of Salloum MPA, prepared in 2015.
5. Review the Admiral maps to determine the height of coastal area and depth in the MPA.
6. Theoretical work: coast was divided into sectors representing to different habitats in the MPA (sandy, rocky, etc.) for GIS needs.

C. Field survey

Over the work period, many activities were implemented:

1. Beach/ coastal surveys to determine the status and condition of the MPA coast, and to monitor cases of mortality or strand animals (if any).
2. The implementation of snorkelling activities and free diving in different habitats (sandy and rocky) in the areas «in front of the Salloum city gate, Khishum El-Azraa, El-Garah, Abu Zriba, and Ras El-Syada areas».
3. Recorded all marine and coastal plant and animal observed species, including fish, invertebrates, sponges, crustaceans, etc.
4. Scientific monitoring was implemented for all habitats in the MPA (longitudinal area, photography, video recording).
5. Monitor MPA coastline to determine the topography of the coast and designate declared boundary.

D. Interviews and coordination with the local community and stakeholders

Many of interviews were conducted with some groups of local community, including:

1. Fishermen community, where they were contacted about the traditional fishing methods in the area and benefit from their experience in characterizing the Gulf and what types of fish exist. The main issue for them was presence of non-indigenous species and the problems caused by these species.
2. The local community was used to guide team to passage into selected points of MPA.

Figure 2. Snorkelling and coastal surveys during the assignment.


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4. ENVIRONMENTAL ASSESSMENT OF MARINE NATURAL RESOURCES IN THE GULF OF SALLOUM MARINE PROTECTED AREA

4.1. Gulf of Salloum Marine Protected Area

The declaration of the Salloum Gulf as a marine protected area was first proposed by the National Planning System of Protected Areas in Egypt issued in 1998. In November 2008, the International Union for Conservation of Nature and Natural Resources (IUCN), agreed to support the preparation of a request for a declaration document for Salloum Marine Protected Area (MPA) on behalf of the Nature Conservation Sector (NCS) of the Egyptian Environmental Affairs Agency (EEAA).

An Egyptian environmental consultancy firm (Environics) was contracted to provide the technical assistance required for the preparation of the declaration study. In the beginning, the proposed MPA was covering area of roughly 1000 Km^2 area, most of which is offshore. While, coastal and terrestrial section of the proposed protected area is approximately 80 Km^2, which has been delineated and identified as a buffer zone to protect the marine habitats from land-based activities. The inclusion of a coastal and terrestrial section into the MPA entailed many constraints; land tenure and war remnants being the most notable of which. Accordingly, it was concluded that the terrestrial section would be reduced at this stage from what was sought for by the NCS pending a change in circumstances allowing its expansion.

Salloum MPA was declared in the 27th of February 2010 as the first MPA on the Mediterranean side of Egypt, in accordance to the Egyptian law for natural protectorates (102/1983) by prime ministerial decree no.533/2010 upon the request of the minister of Environment. The declared area was 383 Km^2, which was less than what was proposed, where, the western side was not included due to security reasons. The protected area is mainly offshore with coastal area covering the first 500 m of the coast along 45 km on coastline.

Figure 3. The Salloum Marine Protected area.

4.2. The importance of declared Salloum MPA

Salloum MPA is considered as the first marine protected area in the Egyptian Mediterranean water with coastal land part to protection of unique wild coastal and marine ecosystems from the pollution of land-based activities. This MPA includes marine, land and coastal resources, in addition to natural and fish resources with economic and environmental value. The MPA also includes habitats and distinct geographical features, such as; tidal areas, sand dunes, cliffs, salt marshes, coastal heights and highlands, as well as, many marine ecosystems such as; sea weeds, shallow, medium and depth water habitats, and characterized with its local community and their rich cultural heritage and traditional knowledge. On the other hand, the interaction of land and sea landscapes provides exceptional views that are not found anywhere in Egypt where habitat diversity and ecosystems support many global importance species.

Although the natural resources in the study area could be considered as perfect purity, the pressures and threats in this area are increasing rapidly of development, economic activities and unsustainable use of resources. Therefore, this anthropological activities impacts which resulting from fishing activities, migratory birds hunting, navigation, urban development, pollution and climate change will be as threaten to the purity status of the natural resources.

This area also, under many of Egypt's national, regional and international conventions related to biodiversity and MPAs conservation, as well as, other cultural and natural heritage conventions, such as; the Barcelona Convention Protocol concerning the Specially Protected Areas and Biological Diversity which contains annexes for endangered species - the Convention on International Trade in Endangered Species of Species of Wild Fauna and Flora (CITES) - Convention on Biological Diversity (CBD) - Convention on the World Heritage - the African Convention on the Conservation of Nature and Natural Resources - Convention on migratory species, and others.

The natural, cultural and economic importance of the Salloum gulf comes from benefits used and unused resources. The total values (natural, cultural and economic) of natural resources services are uncountable, such as; marine vegetation that serves as nurseries and shelters for many marine organisms, the special importance of coastal wetlands for resident and migratory birds as resting and feeding stations, tourism and recreational activities, commercial and recreational fishing activities, education, scientific research and development.

The importance of Salloum MPA is referring to the following:

a. Distinguished and unique characteristics

Salloum MPA contains rare habitats, endemic species and distinct ecosystems, and unique rare geomorphological phenomena or forms. It is difficult to return into their original status, if endangered species faced serious, or extinction factors or collapse of critical habitats.

b. Threatened species or habitats

Salloum MPA contains areas that ensure the survival or rehabilitation of threatened species (fish spawning areas, food-rich areas, resting areas where endangered species during/after migration).

c. Fragile and sensitive areas

Salloum MPA contains a number of fragile and sensitive areas that are easily destroyed by human activities or natural phenomena, which are slowly restored.

d. Biodiversity

Salloum MPA contains relatively high biodiversity at the species, habitats, ecosystems or genetic resources levels (cold coral, spongy, and submerged mountains).

e. Purity areas

Salloum MPA contains areas with a high degree of originality due to the limitation of human activity. This area also, contains a number of natural habitats that have not been urbanized yet.

4.3. The main objectives of Salloum MPA establishment

The establishment of Salloum MPA aimed at the following elements:

1. Maintain the natural resources in the area, and ensure the management of current and future pressures through an integrated environmental system to achieve integrated environmental management concept and improve the quality of the environment status in the area.
2. Preserve the natural conditions and natural resources of the area, which is the fundamental for economic activities in the long term.
3. Support the local community and population and involve them in planning and management of MPA as well as through benefits from it and providing them with alternatives in case of damage.
4. Achieve an effective and productive balance between the requirements of development (especially fisheries) and the conservation of biodiversity priorities.
5. Maximize the benefit of the users of the unique natural resources (investors, tourists and fishermen) and involve them in its management.
6. Activate and encourage the ecotourism in the protected area and place it on the international ecotourism map.
7. Foster the rehabilitation of natural resources affected by the negative past effects, and restore the features and functions to contribute effectively to the development processes in the area.
8. subserve the recovery and the prevention of environmental hazards through continuous monitoring of natural resources in the area.
9. Encourage scientific research on biodiversity and climate change in this area.
10. Support the environmental education and raising public awareness.
11. Provide the capacities and services that will activate conservation measures in MPA (eg, patrolling and follow up, support the national emergency plan of oil pollution and other contaminants).
12. Contribute to the achievement of national objectives to protect the environment and expand of the marine protected areas network in Egypt.
13. Contribute to the implement of Egypt's international responsibilities in the conservation of natural and cultural heritage, in addition to, its obligations towards international conventions related to the conservation of biological diversity.
14. Create real jobs for the local community in area for working on natural resources protection and ecotourism.
15. Encourage local activities that related to the role of women in the maintenance of traditional knowledge and handicrafts to raise income to family and attention with issues of health and education.

4.4. The legal status of Salloum MPA and its biodiversity

The protected area is under several national laws in addition to many of regional and international conventions related to the protection of the environment, protected areas and biodiversity, which includes:

1. National legislation

Law 102/1983 on protected areas and biodiversity: this law is present as legislative and administrative framework for protected areas in Egypt, which defined as «any area of land, or coastal or inland water characterized by flora, fauna, and natural features having cultural, scientific, touristic or esthetic value». With growing awareness of importance of managing resource use to sustain development, as well as awareness of rapid environmental degradation, increased attention was given to environmental

protection.

The second article focusing on banning of committing actions (deeds or activities or undertakings) which will lead to the destruction or deterioration of the natural environment or harm the biota (terrestrial, marine or fresh water), or which will detract from the esthetic (beauty) standards within protected areas. In particular, the following acts are forbidden;

- Catching transporting killing or disturbing wildlife;
- Damaging or removing any living organisms or natural features and resources, such as shells, corals, rocks, or soil for any purpose;
- Damaging or removing vegetation from the protected area;
- Spoiling or destroying the geological structures (and other features) of areas serving as natural habitats and breeding areas for plants and animals;
- Introducing foreign (non-indigenous) species of biota into the protected area;
- Polluting the soil, water, or air of the protected areas in any manner.
- In addition, it is forbidden to erect buildings and establishments, pave roads, drive vehicles, or undertake any agriculture, industrial, or commercial activities in the protected areas except with the permission of the concerned Administrative Body and restrictions specified by the Prime Ministerial Decree.

The decision of the Prime Minister No. 264/ 1994 defines the administrative authority concerned with the implementation of the Law No. 102/ 1983 in Article 2, on «Management of Projects inside the Protected Areas» which is the NCS of the EEAA. The same decision sets the conditions, rules and procedures for the exercise of activities inside of protected areas. Where, the Article 1 of this decision stated that: «not allowed with that, buildings, installations, roads, vehicles, or any agricultural, industrial or commercial activities inside protected areas without the permission of the EEAA». For example, buildings, installations and roads must be constructed in favor of the development of the PAs, and the declared activity should not cause damage to the nature of the area, wildlife, marine or vegetation, or the aesthetic value of the protected area (Article 1, paragraph 1). The second paragraph of the same Article 1, provides that the activities must be consistent with the quality of their practice and classification of protected area and available safety factors.

Law 4/1994 for the Protection of the Environment which is amended by Law 9/2009; became the primary legislation for environmental management in Egypt, and creating the Nature Conservation Sector for management of Egypt's protected areas.

Law No. 4/1994 sets the general framework for environmental policies in relation to biodiversity in Egypt. Article 28 prohibits, in any way, the hunting, killing or catch of birds and wild animals whose types determine the executive regulations of this law, as well as, transport, walk around, sell it life or dead. It is also prohibited to destroy the birds' nesting sites or harvesting their eggs.»

Salloum gulf is considered as one of the most important habitats for many marine and coastal organisms and its various stages of life. It is also one of the important migratory routes of birds and represents one of the critical areas due to bird hunting.

Law 124/1983 regulating fisheries, forced by General Authority for Fish Resources Development.

The Convention for the protection of the marine environment and the coastal region of the Mediterranean (Barcelona, 1976 and 1995), also known as the Barcelona Convention, ratified by Egypt in August 1978. The Convention is complemented by a number of specific Protocols, including the "Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean". A Regional Activity Centre for Specially Protected Areas (SPA/RAC) was established in Tunis with the mandate of supporting Parties to the Convention in the implementation of the Protocol's provisions. In particular, the Contracting Parties to the Barcelona Convention adopted in 1987 and "Action Plan for the management of the Mediterranean monk seal (*Monachus monachus*)" (UNEP/MAP, 2003), and in 1991 an "Action Plan for the conservation of Mediterranean cetaceans" (UNEP/MAP, 1991), setting up conservation priorities (prohibition of deliberate taking; prevention and elimination of pollution; elimination of incidental catches in fishing gear; prevention of over-exploitation of fishery resources; protection of feeding, breeding and calving grounds including through the establishment of a network of marine reserves; monitoring, research and data collection and dissemination with regard to biology, behaviour, range and habitats of marine mammals; and educational activities aimed at the public at large and fishermen) and obligations for the Parties. The Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MAP), with headquarters based in Athens, acts as the Secretariat of the Convention.

The Convention on the Conservation of Migratory Species of Wild Animals, also known as CMS or Bonn Convention (Bonn, 1979), ratified by Egypt in February 1982. The Mediterranean monk seal, the fin whale, the sperm whale and the short-beaked common dolphin are listed in the Convention's Appendix I (strictly protected migratory species that have been categorized as being in danger of extinction throughout all or a significant proportion of their range); the same species and striped dolphins are also listed in Appendix II (migratory species which have an unfavorable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement).

The Agreement on the Conservation of Marine mammals of the Black Sea, Mediterranean Sea, and Contiguous Atlantic Area, also known as ACCOBAMS (Monaco, 1996), a special agreement established under the framework of CMS, its "parent convention", aimed at the protection of all marine mammal species found in the Agreement area. Ratified by Egypt in June 2010.

The Convention on Biological Diversity, also known as CBD (Rio de Janeiro, 1992), urges Contracting Parties to develop national programmes that will safeguard their natural heritage and biological diversity. Ratified by Egypt in June 1994.

United Nations Convention on the Law of the Sea UNCLOS (Montego Bay 1982), ratified by Egypt in December 1982.

4.5. physical and chemical characteristics of the MPA

The geographical location of the Gulf of Salloum determines the factors affecting its natural and physical characteristics of the MPA. For example, the presence of Salloum in the open waters of the Mediterranean Sea in addition to the currents known as the "North Atlantic currents" creates circular currents that anticlockwise in the Gulf, which affect the geological and biological characteristics of the Gulf. The north-eastern winds increase the impact of these currents, thus cover the entire Gulf to the Sidi Barani area. In addition to, the Gulf position in the subtropical region is characterized by high temperatures and evaporation rates. The west and south areas are bordered with dry continental climates, resulting in a higher evaporation rate than the rain.

1. Water Quality

   The pH values were within the normal range of the seawater, these values were between (7.81 - 8.14).

2. Temperature and Salinity

   Generally, the water temperatures were representatives to different annual seasons, which were between (24.74 – 26.94 °C). While, the recoded salinity was within the normal range between (34.42 – 38.12 ‰).

3. Sediment

   The composition of the size of soil granules is characterized by the same characteristics of the original rocks. Sand forms the main component of the sea bottom of the Gulf of Salloum, which ranged from (83.38 % - 97.12 %) of various sizes (soft - medium - rough), while, highest ratio of the silt is (5.54 %) in exposed areas to torrents, and gravel ranges from (0.29 % - 13.89 %).

4. Transparency

   The highest degree of water transparency was recorded from the western part of Salloum to the Bitash west of Alexandria.

5. Concentration of organic dissolved oxygen (DO)

   There is no acute hypoxia cases. All dissolved oxygen ratios were founded in Egyptian Mediterranean water quality monitoring stations, included Salloum area, at normal levels and above the minimum allowable amount of coastal water globally (less than 4 mg/L).

6. Biochemical oxygen demand (BOD) & Chemical (COD)

   Biochemical oxygen demand (BOD) is indicator of the concentration of dissolved oxygen required that is used by aerobic microorganisms when decomposing organic matter in water, therefore, the increasing of the biodegradable organic matter will lead to reduce dissolved oxygen, making the aquatic environment unsustainable. While, Chemical Oxygen Demand (COD) is a measurement of the oxygen required to oxidize soluble and particulate organic matter in water, which giving an indication of the water's need for oxygen. The results of the monitoring of BOD & COD were lowest in the Western part with an average value less than 3 mg/L.

7. Organic matter

   Generally, an organic matter is composed of lightweight materials, whether living or organic, and these small objects are deposited in quiet areas. There is always a relationship between the presence of soft deposits and their organic content. The organic matter affects aquatic ecosystems through interacting with inorganic substances and form complex chemical compounds containing many other elements. Organic matter is the food source of many living groups. However, some free gases such as carbon dioxide (CO_2) and hydrogen sulfide (H_2S) may arise, which affect the composition of sediment and then ecosystems.

The organic matter in the Gulf of Salloum is ranged about (4.32 % - 5.48 %).

4.6. Biological species recorded during the field survey

For Egypt, the Mediterranean Sea is one of its main natural resources. Therefore, the biodiversity of Egyptian Mediterranean water is important at the community and ecosystem levels, where it can affect the value of the natural resources. Diversity can be measured through the number of species and its importance in different ecosystems. This information can be obtained by using a variety of surveys methods, and then determine the state of ecosystems in terms of the abundance or absence of different species in those ecosystems.

During the survey period, a number of biological (animal and plant) species, living or dead, were recorded from different classes. The survey included (coastal plants, marine plants, algae, fish, marine invertebrates, aquatic birds, stranded marine animals, etc.), to update and compare with the species recorded in the previous studies, taking into account the climatic conditions during the survey period (December) and the security situation of the surveyed areas. The covered long transect in survey were in average distance of 1000 m from the coastline in both sandy and rocky bottom.

1. Stranded animals
   - In the area of Khishum El-Azraa, skull and remains of dolphin skeleton and green turtle completely decomposed were recorded. In addition, one vertebra found could belong to the Mediterranean monk seal (in the process of identification).
   - In the Ras El-Syada, a recent sample of a loggerhead marine turtle was recorded.

Figure 4. Skull of dolphin and loggerhead turtle found during the assignment.

2. Coastal vegetation cover*

   Along of the coastline of Salloum MPA, many of the plant species were recorded in different areas, such as; salt marshes, sandy dunes, and different habitats in the MPA, the most important records were as following:

Table 1. Coastal vegetation recorded in diffrent parts of the Salloum MPA.

	Site	Species
1	Salloumcity gate	*Euphorbia paralias, Pancratium maritimum*
2	Khishum El-Azraa	*Hyoscyamus muticus, Salsola tetrandra, Thymelaea hirsute, Zygophyllum album*
3	El-Garah	*Nitraria retusa, Sporobolus spicatus*
4	Abu Zriba	*Arthrocnemum macrostachyum, Ephedra aphylla, Halocnemum strobilaceum, Juncus rigidus, Phoenix dactylifera, Phragmites australis, Suaeda maritima*
5	Ras El-Syada	*Euphorbia paralias, Nitraria retusa, Pancratium maritimum, Phoenix dactylifera, Phragmites australis, Retama raetam, Salicornia fruticosa, Zygophyllum album*

3. Maine vegetation cover and algae

Table 2. Marine vegetation recorded in the Salloum MPA.

	Site	Species	Substrate	Notes
1	Khishum El-Azraa	*Posidonia oceanica*	sandy	*Posidonia* habitat started from 7 m depth
2	El-Garah	*Posidonia oceanica , Sargassum vulgare*, Acrosymphyton purpurifarum*, Ceramium ciliatum*, Cystoseira amentacea, Codium bursa**	Rocky mixed with *Posidonia*	*Posidonia* habitat started from 8 m depth

* New recorded species

4. Marine fauna (Animals)

Table 3. Marine fauna recorded in the Salloum MPA.

	Site	Species						Bottom type
		Fish	Crustacea	Annelida	Mollusca	Ascidia	Porifera	
1	Salloum city gate	*Trachinotus ovatus**	----------	----------	----------	----------	----------	Sandy
2	Khishum El-Azraa	*Trachinotus ovatus**, *Cheilopogon heterurus**,	*Ocypode cursor*	----------	----------	----------	----------	Sandy
3	El-Garah	*Thalaassoma pavo**, *Trachinotus ovatus**, *Diplodus vulgaris*, *Decapterus punctatus**, *Sarpasalpa*, *Sphyraena sphyranea**,*Corisjulis*, *Scorpaeno desarenai** *Torquigenerflavim aculosus**, *Siganus luridus.*	----------	*Sabella spallanzanii*	*Osilinus turbinatus**, *Limpet*, *Tonnidae**, *Cypraeasp.**, *Lithophaga lithophaga*, *Spondylus gaederopus*, *Octopus* sp.	*Microcosmus squamiger**	*Cliona celata**, *Cliona viridis**, *Aplysina aerophoba*, *Axinella polypoides*, *Crambe crambe**, *Sarcotragus spinosulus**	Rocky

* New recorded species

During the field survey, number of species not recorded in the previous surveys, were recorded: 17 species of coastal plants within the protected area, 4 species of algae and marine plants. The survey also includes new fauna recordes: 7 species of fish, one species of Ascidia, 3 species of mollusks, and 4 species of sponges.

Many previous studies have shown that the area includes a distinguished biological diversity, represented by the large variation of environments and habitats and species of living organisms, which depends on a large number of species, including:

- More than 160 species of resident and migratory birds, some of them are of international importance.
- More than 30 species of reptiles and amphibians, some of them endangered.
- More than 30 species of mammals, including species believed to be extinct or highly endangered.
- 57 species of large benthic fauna in the Gulf of Salloum from seven major groups: Coelenterata, Trematoda, Annelida, Mollusca, Crustacea, Echinodermata, and Ascidiidae.
- 55 marine species of commercial species in the Gulf (5 molluscs, 3 crustaceans, 5 cartilage fishes and 42 bony fishes).
- The targeted species are about 20 commercial species required by the markets, including Grouper, Seabream, Mugilidae, as well as Sepia and Octopus. The by-caught species (non-target or accidental) that are 49 species were collected, some of them are economically valuable and others have no economic value.
- El-Garah site is considered as one of the most biological importance coastal areas in the MPA.

This diversity varied in many studies that reviewed in according with the timing and location of the study and the survey method (included in the Annexes).

Figure 5. Photo of *Octopus* sp. captured in El Garah area.

4.7. Topographic characteristics of the MPA

Although the MPA is mostly located in the marine area (Salloum Gulf), the coastal and land environment study was important for two reasons: first, to clarify the environmental value of the coastal and land area that adjacent to the marine protected area; and the second, taking into consideration planning for future activities in area that may be outside MPA border but will cause direct or indirect affect it.

The Western Coast of the Egyptian Mediterranean Sea is one of the most important wild biodiversity areas, which supports many species of wild flora and fauna.

The habitats of that area are very important, form any of international importance endangered and endemic species, and it have unique geographical characteristics that are unmatched in Egypt.

The natural landscape of Salloum area (from north to south) can be divided into:

1. Unique marine environment of the Mediterranean (sandy or rocky beaches).
2. Tidal area and coastal sand dunes.
3. Cliffs, which are about 100 meters above sea level and are located north of the city of Salloum only.
4. Saline depressions; there are some sabkha plants and freshwater ponds.
5. The coastal plateau, with different widths and many depressions filled by sand and shallow valleys and good vegetation cover.
6. The limestone hill, that limits the coastal plateau from the south-west side and reaches 190 m height, which is one of the most important features of the natural land, and give supports to many of the plant and animal species in the area.
7. The plateau of the "Deffah" or the Libyan plateau, is a vast plateau of Miocene limestone, extending to south and west, and the plateau contains a good vegetation cover.

In general, the coastline of the marine protected area is characterized by sandy beaches, which are the most dominant beaches, and relatively low coastal areas. In some areas, the MPA was also characterized by large coastal plains with a series of hills parallel to the coast. In some locations, patches of rocky beaches or rocky hills intersect with sandy beaches. This is distinguished phenomenon of the coasts of the West Delta in general; as examples, there are small areas in the Gulf of Sidi Abdel Rahman, Ras El-Hekma and others.

The Table 4 identifies the specific points of the marine protected area in according to the Figure 6.

Table 4. Coordonates of the Salloum MPA.

points	Coordinates	
	Longitute	Latitude
1	25° 37' 10.96"	31' 41 00"
2	25° 37' 23.34"	31° 33' 53.61"
3	25° 22' 26.33"	31° 26' 48.14"
4	25° 12' 35.31"	31° 30' 57.55"

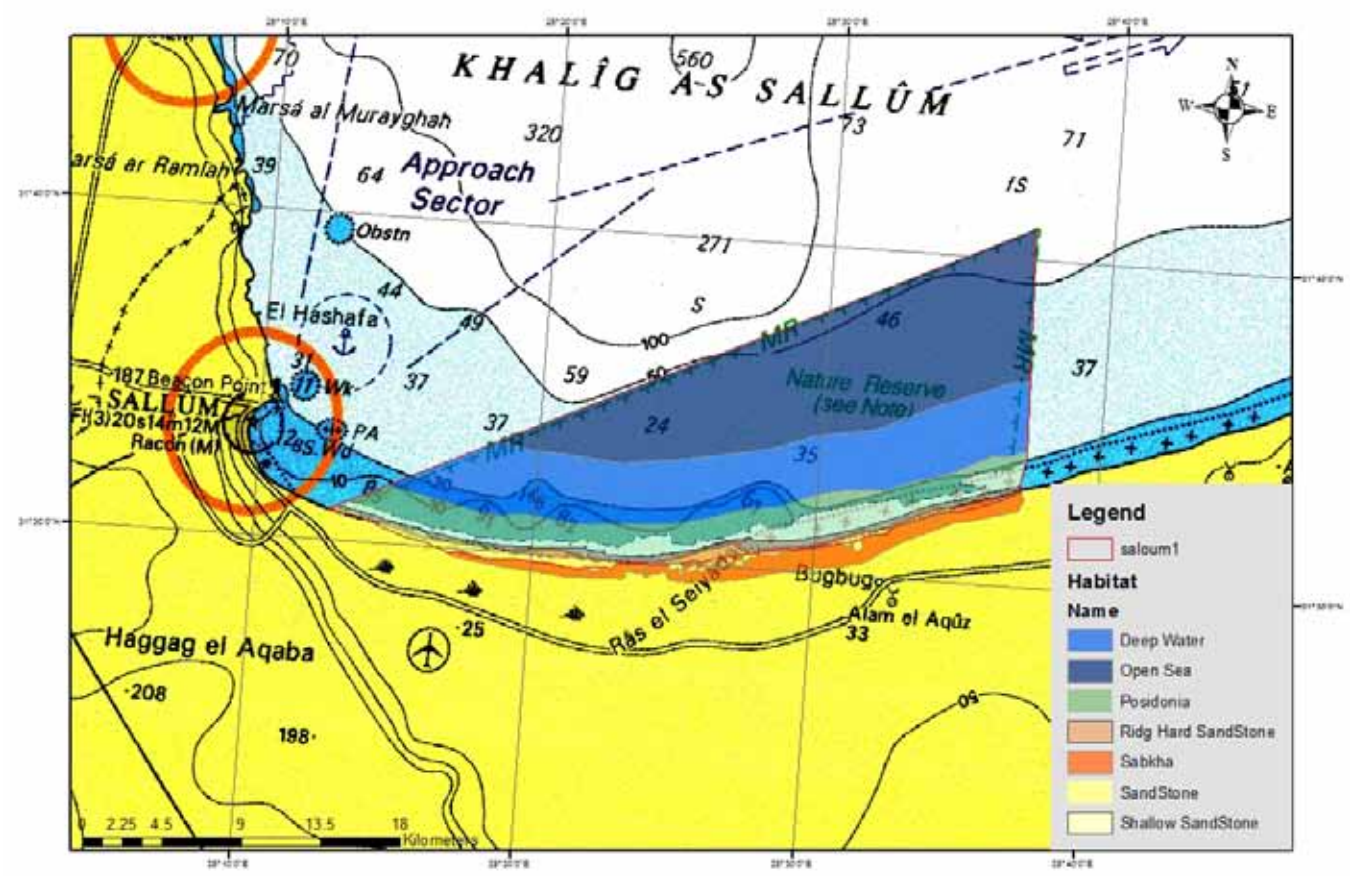

Figure 6. Zoning of the Salloum MPA.

4.8. Socio-economic and cultural characteristics of the MPA

The center and city of Salloum is located on the Egyptian border with Libya, west of Matrouh governorate, which is located in the western side of Alexandria governorate, with population density of about 16000 people in 2016. The total area of the center and city of Salloum is 4500 km^2 as 1.4 % of the area of Matrouh Governorate. The residential area is about 425 km^2 as 9.4 % of the total area of Salloum center and city. It includes the city of Salloum (western border of the protectorate), Baqabq city (the eastern border of the protectorate) as well as the cities of Abu Zribaand Shebikat, there are huge distance between these residential areas.

Most of the population of Salloum is economically and culturally relevant with the Mediterranean Sea. The Bedouin constitute about 70% of the total population belonging to two main tribes, the Kotaan and Haboon, in addition to those arrivals from other parts of Egypt. Other tribes are also scattered in the Western Desert, such as Ghoiamat, Awlad Ali, Samalouz, Mahafeez, Camilat and Shohebat.

Generally, Salloum community is divided into two main groups: Bedouin and arrivals, and the residents of Salloum are lives in poor conditions compared to regional and international standards. Where the city lacks most infrastructure and social services.

Traditional economic activities in this area include rainwater crops such as watermelons, black grapes, figs, olives, cucumbers, tomatoes and wheat. A few people care for grazing animals such as goats, sheep, cows and camels. Economic activities also include wild hunting, handicrafts, trade, government jobs, small industries and fisheries, which are consider a very limited at the scale of Salloum city and marine protected are. Through coordination and communication with the administrative authorities concerned with the management of marine fisheries and the local community in Salloum city in order to review of relevant statistical studies and publications, it was stressed on that the total number of fishermen according to the annual statistics of the General Authority for Fisheries Development in 2016, all registered fishermen in Matrouh Governorate are 12 individuals as 0.1 % of the total registered fishermen in the Mediterranean Sea.

The fishing gears of the mechanized/ powered boats includes the two to gears; long line (Al-Sinar) and the gill nets are 3, 13 fishing boats as 0.3 % and 2.1 % respectively of the total fishing fleet of each gear in Egyptian Mediterranean sea. While the number of sailboats (third class) in Matrouh governorate reach to 29 boats which is 3.9 % of the total third class sailing boats in the Egyptian Mediterranean Sea. The percentage of licensed boats in Matruh Governorate according to the type of fishing gear is 7 %, 29 %, 64 % for long line, gill net and sail, respectively.

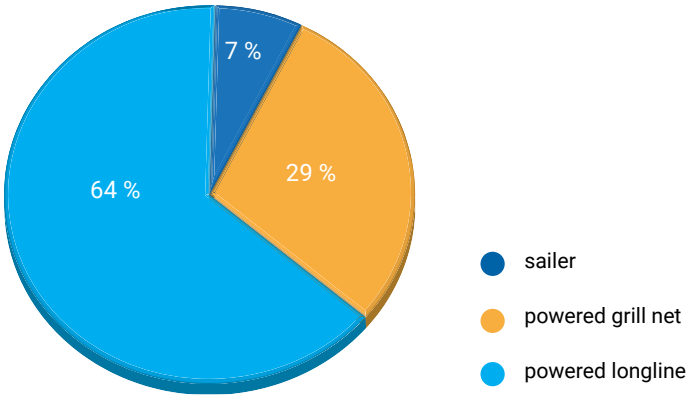

Figure 7. Percentage of licensed boats according to the fishing gear in Martouh.

The socio-economic study, which prepared in 2015 on Salloum MPA, founded that fishing activity decrease day by day. In the context of the discussions with fishermen on the fish products and fishing seasons, they were noted that in the average product in high season may reach 10 kg/ boat per day, and the minimum is about 2 kg/ boat per day for small boats), while the maximum is about 20 kg/ boat per day for large boats.

The main important fish groups that targeted from the commercial fishermen in Matrouh governorate are; the Grouper (8 %), the Red Porgy (9.1 %), European Barracuda (3.2 %), Brushtooth Lizardfish (1 %), Bogue (12,1 %), Red Mullets (10.3 %), common cuttlefish (7.4 %), White Seabream (7.4 %), Cartilaginous Fish (10,63 %), other groups (12.4%) of the total marine catch in the governorateas well as some other small species.

However, the fishing community is facing many obstacles in the marine fishing activity, such as water pollution, dynamite fishing, the security banning from night fishing, and the lack of fishing boats for maintenance.

Figure 8. Traditional boats used for fishing in Salloum MPA.

Hunting of migratory birds is a seasonal hobby/ practice basically, not just for livelihood. The migratory birds hunting season extends between June and September. However, there are some of local community catches birds to gain extra income, when they sell what they caught, especially quail. There are also very few who trade in the rare species of falcons to Arab Gulf princes with a lot of money.

Figure 9. Artificial birds used to trick migrants birds.

On the other hand, the tourism industry still constitutes a very small percentage of the labor force in the area. The activation of the protector area declaration and the preparation of a management it will promote the ecotourism and sustainable green tourism in the area, which is promising in this unique place.

The city of Salloum has undetected tourist potential for tourism, it is including; landscaping, touristic beaches, swimming, diving, boating, desert tourism, camping, desert safaris, bird watching and historical and archaeological tourism. According to the Statistical Yearbook of the Central Agency for Public Mobilization and Statistics (CAPMAS) 2006, Salloum receives about 7,000 tourists in the winter and nearly 10,000 tourists in the summer out of a of 8 million visitors per year to Egypt. Most visitors to Salloum area comes from western Arab countries of the Egyptian border (Libya, Tunisia, Algeria and Morocco), as well as Germany, Italy, the United States of America and the UK. However, with the decrease of touristic activities in the area, the land-based natural resources and biodiversity of the area may be threatened by local community pressure on them with unsustainable livelihoods and exploitation, where there are no alternative options. Therefore, the development plans are required for City and Center of Salloum and must take into account the environmental dimension of the area.

The city of Salloum needs a comprehensive sustainable development plan for local development, especially plan for the development of ecotourism. This development is mainly will be linked with infrastructure and social services, such as; sufficient potable water provision, the establishment of reservoirs for natural water storage, and the increased capacity of desalination plants. These will follow by the improvement of local services and the local natural environment in terms of solid waste management, health care services and education.

5. THREATS FACING THE SALLOUM MPA

Salloum Gulf area - especially Salloum MPA - is a protected area by itself. The marine and coastal ecosystems in Salloum area are still in good condition with a limited percentage of solid waste on the coastline. This area is protected because the majority of it in offshore side, and it on the one hand, under control of border guards and navy forces, and on the other hand, the Presidential Decree No. 444/ 2014 concerning the securing of areas adjacent to the borders of the Arab Republic of Egypt.

However, the Gulf of Salloum is also, exposed from the land side to many of the risks that threaten the natural resources of the area and biodiversity and vulnerable it to decay and degradation without awareness with its importance. Most of these risks produced from economic activities in the area, such as; small fish overfishing through unsustainable, or dynamite fishing methods) exceed wild hunting, bird hunting and irresponsible coastal and urban development. The pollution with solid waste from land sources is currently considered the most critical factors affecting the environment and resources of this area. Moreover, some of these risks are increasing due to the economic and developmental pressures, where, many of that activities are carried out without a conscious management or law enforcement to wildlife, the position of this area as boarder city is critical issue, may contribute to local deterioration as mentioned above.

The most significant threats that facing the MPA can be identified as follows:

- Petroleum pollution that resulted from some oil infiltration incidents in past.
- Plastic waste pollution and sea waste, in addition to fishermen and local camps wastes.
- Excessive exploitation of the MPA resources, such as: sand and stones collection from the sand hills and rock formations located on the coast of the MPA.
- Over hunting of migratory and resident birds, especially after the emergence of birds sounds mimic devices and intensively using by the local community.
- Recorded number of alien species, particularly invasive species, within the MPA.
- Degradation of natural habitats in the MPA.
- Irresponsible planning of MPA lands without taking into account the natural criteria and environmental sensitivity of the MPA.
- Climate change and coastal erosion.
- Lack of coordination and conflict of interest between relevant stakeholders and beneficiaries of the biodiversity components in the MPA.
- Lack of research and development programs which concerning to the priorities of the MPA.

Figure 10. Some of the threats facing the Salloum MPA (plastic pollution, invasive species).


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6. LESSONS LEARNED AND RECOMMENDATIONS

6.1. Lessons learned

- Rapid assessment of MPA and its natural resources.
- Comparison of field survey results with the previous studies.
- Coordinate with the administrative and security authorities related to the marine protected area.
- Using of specialized researchers team from EEAA to implement assessment within the MPA.
- Communicate with the civil society and stakeholders in the MPA and build trust bridges with them to prepare this study.
- Collecting data and information from the local community engaged in fishing, grazing activities and others.
- Survey the MPA area and update data on biodiversity and biological diversity.
- Making a topographic map along the coastal line of the MPA.

6.2. Recommendations

The Salloum Gulf area, marine resources, and MPA with its marine and coastal ecosystems, must be managed to insure implement of the conservation and sustainability principles. This requires the provision of human and financial resources that necessary to achieve the main objective of Salloum MPA declaration, and protect the cultural heritage of the local community through providing a group of qualified and unqualified individuals from Salloum or Marsa Matrouh cities whose are marine technicians, media professionals, environmental guards, drivers, etc., as well as basic infrastructure for field work of the MPA. It can be emphasized that a number of recommendations are:

- Implement of a periodic monitoring programme for the MPA.
- Capacity Building of the rangers & environmental guarders of the Northern Protected Areas in the field of marine monitoring and diving activities.
- Participation Intensively in regional and international meetings and presenting the Egyptian efforts to conserve the MPAs and marine biodiversity in the Mediterranean Sea.
- Continuing the preparation process of Salloum MPA management plan in a participatory approach with all relevant authorities.
- Implement programs for the protection of marine biodiversity and habitats components in the Egyptian Mediterranean water in coordination with SPA / RAC.
- Preparation of land-use map for MPA, taking into account the environmental and socio-economic dimensions of the area.
- Preparation of strategic action plan for the management of northern marine protected areas network in the Egyptian Mediterranean area.
- Encourage research institutions to announce postgraduate studies (master's and PhD) that related to the priorities of the MPA.
- Coordinate with the administrative and security authorities to control and prevent infringements that harm the protected environment.
- Coordination and cooperation with all relevant bodies that concerning with environmental conservation work within the protected area.
- Coordinate with the local community and users of MPA resources to avoid activities that are not responsible.
- Increase efforts of monitor and assess biodiversity and marine habitats in the Egyptian Mediterranean Sea to include all declared and future coastal and marine protected areas in the Mediterranean and propose new PAs.
- Support the administrative structure of the MPA with efficient researchers, administrators and environmental guards, and provide the necessary tools and equipments to implement the monitoring and protection programs.

7. SELECTED REFERENCES

1. دراسة مقترح إعلان محمية خليج السلوم بمحافظة مرسى مطروح - جهاز شئون البيئة، قطاع حماية الطبيعة (2009).
2. د. حسين أباظة - التقييم الاجتماعي والاقتصادي للأنشطة البحرية: مرفق البيئة العالمي (2015).
3. محافظة مطروح.
4. الجهاز المركزي للتعبئة والإحصاء.
5. دراسة التقييم الاجتماعي- الاقتصادي لمحمية السلوم البحرية - المكتب الاستشاري «إنفايرونكس»، استشاري البيئة والتنمية.
6. التقرير السنوي للبحر المتوسط- جهاز شئون البيئة (2016).
7. كتاب الإحصاءات السمكية السنوي - الهيئة العامة لتنمية الثروة السمكية (2016).
8. خطة العمل لمحمية خليج السلوم البحرية لعام (2016).
9. Baha El Din, Sherif (1999), Proposal to Establish a Protected Area in Sallum Region, a report submitted to The Conservation of Wetlands & Coastal Ecosystems in the Mediterranean Region Project
10. IUCN, (1998), Economic values of protected area, Guidelines for protected area managers, best practice protected area guidelines. Series No. 2 IUCN.
11. National Institute of Oceanography and Fisheries, IUCN (2008), Assessmet of Fisheries and Marine Biodiversity of Sallum Gulf-Egypt.
12. Nadine Marchall, Iman El Bastawisi, and Paul Marchall, Towards Marine Protected area Success: The Human Dimensions of a Prospective MPA in Sallum, Egypt, December 2007.
13. Elhaweet Alaa eldin, *et al*,:Assessment of Fisheries and MarineBiodiversity of Sallum Gulf, Egypt, IUCN & NIOF, 2008.

ANNEXES

Appendix (1):
recorded species in the Gulf according to the IUCN study August 2007

Group	Species	Notes
Cnidaria	*Stylophora sp.*	
Porifera	*Myxilla prouha*	
	Spongia afficinalis	
	Halichondria panacea	
	Suberites doumuncula,	
	Cacospongia molliar	
	Agelas oroides	
	Spongia zimocca	
	Ircinia fasciculate	
	Hisppaspongia communis	
Annelida	*Sabella sp.*	
	Harmothoe sp.	
	Lanthina commun	
	Hermodice carunculatta	Invasive species
	Eteone sp	
	Capetella capitata	
	Syllidia armata	
	Myxicola sp.	
Mollusca	*Aeolidacea sp.*	
	Pecten jacobaeus	
	Abra alba	
	Spondylus gaederopus	
	Pinna nobilis	
	Arca noae	
	Venus verrucosa	
	Natica dilwyni	
	Thias haemastome	
	Cerithium vulgatum	
	Turritella communis	
	Bulla striata	
	Calyptraea chinensi	
	Conus mediterraneus	
	Tricolia pulla	
	Murex trunculus	
Crustacea	*Atylus swammerdami*	
	Bathyporeia guillamsoniana	
	Sphaeroma walkeri	
	Hayle schimediti	
	Atilecylus sp.	
	Pagarus anachoretus	
	Aceroides latipes	

Echinodermata	*Echinaster sepositus*	
	Ophidiaster ophidiarum	
	Ceramaster placenta	
	Cidaris cidaris	
	Astropecten bispinosum	
	Anseropoda placenta	
	Sphaerechinus granularis	
	Amphiura chiajei	
	Arbacia lixula	
	Ophiomyxa pentagona	
Ascidiacea	*Didemnum gelatinosum*	
	Ascidia mentula	
	Styela partita	
	Botrylloides leachi	
	Botryllus schlosseri	
	Halocynthia papillosa	

Appendix (2):
Recorded fish species during 2003-2007

Group	Family	Scientific name	English name	Arabic name	May. 2003	Oct. 2004	May. 2005	Aug. 2007
Cartilagenous fish	Scylirhinidae	*Scyliorhinus canicula*	Shark	قرش	x			x
	Triakidae	*Mustelus mustelus*	Smooth hound shark	مستولا				X
	Dasyatidae	*Dasyatis pastinaca*	Common Stingray	بقره مزركشة				X
		Himantura uarnaka	Honeycomb Stingray	بقره			x	X
	Myliobatidae	*Myliobatis aquilaa*	Common Eagle Ray	وطواط			x	
	Rajidae	*Raja miraletus*	Browen Ray	راي بعينين			x	
		Raja radula	Rough Ray	رايه		x	x	X
Bony fish	Apogonidae	*Apogon imberbis*	Cardinal Fish	أبجون			x	X
		Apogon taeniatus	Twobelt Cardinal	أبجون		x	x	
	Atherinidae	*Atherinomorus lacunosus*	Hardyhead Silverside	بساريا		x		
	Balastidae	*Balistes carolinesis*	Gray Tigger Fish	خنزير بثلاث شوكات			x	
	Blennidae	*Blenius ocellaris*	Butterfly Blennie	أبو قراع		x	x	X
		Parablennius incognitus	Blennie	أبو قراع			x	
	Bothidae	*Bothus podas*	White-Eyed Flounder	سنجتا	x	x	x	X
	Carangidae	*Trachurus mediterranean*	Blue Scad	شاخورة			x	X
	Centracanthidae	*Spicara flexuosa*	Picarel	موزة الجر	x		x	X
	Centracanthidae	*Spicara meana*	Plotched Picarel	موزة	x	x	x	
		Spicara smaris	Picarel	موزة	x	x	x	
	Citharidae	*Citharus linguatula*	Spotted Flounder	موسى منقطه	x	x	x	X
	Congridae	*Ariosoma balearicum*	Balearic Conger	ثعبان			x	X
	Engraulidae	*Engraulis encrasicolus*	Anchovy	أنشوجه				
	Fistularidae	*Fistularia commersonii*	Cornetfishes	ابو صفارة		x	x	X
	Gobiidae	*Gobius niger*	Black Goby	أبوكرش			x	
	Holocentridae	*Holocentrus rubrum*	Red Soldier Fish	جحاية	x			
	Labridae	*Coris julis*	Rainbow Wrasse	عروسه	x	x	x	
		Pteregogus pelycus	Sideburn Wrasse	عروسة بخط بنى			x	
		Symphodus spp		عرائس			x	
		Xyrichthys novacula	Cleaver Wrasse	ببغاء	x	x		X
	Merluccidae	*Merluccius merluccius*	European Hake	نازلي	x			X
	Monacanthidae	*Stephanolepis diaspros*	Leatherjacket	خنزير بشوكة	x	x		X
		Stephanolepis hispidus		خنزير بشوكة			x	
	Mullidae	*Mullus barbatus*	Striped Red Mullet	بربوني				X
		Mullus surmuletus	Striped Mullet	بربون حجر	x	x	x	X
		Upeneus asymmetricus	Golden Striped Goatfish	بربونى			x	
		Upeneus francisi		بربونى			x	X
	Pomacentridae	*Abudefuf sexfasciatus*	Scissortail Sergeant	دمسل		x		
		Chromis chromis	Damsel Fish	فناشة		x	x	X
	Scaridae	*Scarus cretensis*		مرزبان			x	X
		Sparisoma cretensa	Parroy wrasse	مرزبان	x	x		X

Bony fish	Scorbaenidae	*Scomberomorus commerson*	Spanish Mackerel	دراك			x	
		Scorpaena notata	Small-Scaled Red Scorpionfish	عقرب أحمر	x	x	x	X
		Scorpaena scrofa	Red Scorpionfish	عقرب أحمر	x	x		X
		Scorpaena porcus	Small-Scaled Black Scorpionfish	عقرب بنى	x			
	Serranidae	*Epieniphelus aeneus*	White Grouper	وقار		x	x	
		Epieniphelus alexandeinus	Golgen Grouper	وقار			x	
		Serranus cabrilla	Comber	شيخ	x	x	x	x
		Serranus hepatus	Brown Comber	شيخ	x	x	x	x
	Siganidae	*Siganus luridus*	Dusky Spinefoot	بطاطا	x	x		
		Siganus rivulatus	Marbled Spinefoot	بطاطا	x	x	x	x
	Solidae	*Microchirus ocellatus*	Thickback Sole	شبه موسي بدوائر		x	x	x
		Solea aegyptiaca	Egyptian Sole	موسى	x			
		Solea impar	Adriatic Sole	موسى			x	x
		Solea nasuta		موسى مزركشة			x	
		Solea vulgaris	Common Sole	موسى	x	x		x
	Sparidae	*Boops boops*	Bogue	موزة		x	x	x
		Diplodus anunularis	Annular Sea Bream	سبارس				x
		Diplodus bellottii		وزانية	x			
		Diplodus sargus	Two-Banded Bream	شرغوش حر	x	x		
		Diplodus vulgaris	White Sea Bream	شرغوش رشيدى		x	x	x
		Lithognathus mormyrus	Striped Sea Bream	مرمار	x	x		x
		Pagellus acarne	Spanish Bream	غزيله برونزية	x	x		x
		Pagellus erythrinus	Pandora	غزيله حمراء	x	x	x	x
		Pagrus pagrus	Common Sea Bream	مرجان	x	x	x	x
		Sarpa salpa	Salema	سرب				x
		Sparus aurata	Gilt-headSea Bream	دنيس	x			
	Synodontidae	*Saurida undosquamis*	Brushtooth Lizard Fish	مكرونة مخططة	x		x	
		Synodus sourus	Atlantic Lizard Fish	مكرونة صفراء	x	x		x
	Tetradontidae	*Lagocephalus sceleratus*		أرنب ببقع			x	
		Lagocephalus spadiceus	Half-Smooth Golden Bufferfis	أرنب		x	x	x
	Trachinidae	*Trachinus araneus*	Spotted Weaver	بلامة	x	x	x	
		Trachinus draco	Greater Weaver	بلامة	x	x		x
		Trachinus radiatus	Starry Weaver	بلامة		x	x	x
	Triglidae	*Lepidotrigla cavillone*	Large-Scaled Gurnard	فرخة			x	x
		Trigloporus lastoviza	Streaked Gurnard	فرخة حمراء	x	x		x
		Trigla lucerna	Tub Gurnard	فرخة		x		
		Trigla lyra	Piper Gurnard	فرخة		x		x
	Uranoscopidae	*Uranoscopus scaber*	Stargazer	قط	x	x	x	x
	Zeidae	*Zeus faber*	John Dory	عفريت	x	x	x	x

Mollusca	Loliginidae	*Loligo vulgaris*		كاليماري		x		x
	Sepiolidae	*Sepia officinalis*	Common cuttlefish	سبيط				x
	Sepiolidae	*Sepia elegans*		سبيط	x	x	x	x
	Octopodidae	*Octopus vulgaris*	Common octopus	أخطوبوط	x	x	x	
		Eledone moschata	Musky octopus	أخطوبوط				x
		Octopus macropus	Long-legged octopus	أخطوبوط				x
Crustacea	Penaeidae	*Trachypenaeus curvirostris*		جمبري عجوز (عقر)	x			x
	Portunidae	*Portunidae*		استاكوزا		x		
	Scyllarides	*Scyllarides*	Medit. Locust lobster	استاكوزا				x
	Squilidae	*Squilla mantis*	Mantis shrimp	شكالة				x
		Oratosquilla Massavensis		شكاله			x	

Annex (3):
the main threatened and endangered Species of the Annex II to the Barcelona Convention

Magnoliophyta	*Posidonia oceanica*
	Zostera marina
	Zostera noltii
Chlorophyta	*Caulerpa ollivieri*
Phaeophyta	*Cystoseira amentacea* (including *var. stricta and var. spicata)*
	Cystoseira mediterranea
	Cystoseira sedoides
	Cystoseira spinosa (including C. adriatica)
	Cystoseira zosteroides
	Laminaria rodriguezii
Rhodophyta	*Goniolithon byssoides*
	Lithophyllum lichenoides
	Ptilophora mediterranea
	Schimmelmannia schousboei
Porifera	*Asbestopluma hypogea*
	Aplysina sp. plur.
	Axinella cannabina
	Axinella polypoides
	Geodia cydonium
	Ircinia foetida
	Ircinia pipetta
	Petrobiona massiliana
	Tethya sp. plur.
Cnidaria	*Astroides calycularis*
	Errina aspera
	Gerardia savaglia
Echinodermata	*Asterina pancerii*
	Centrostephanus longispinus
	Ophidiaster ophidianus
Bryozoa	*Hornera lichenoides*

Mollusca	*Ranella olearia (= Argobuccinum olearium = A. giganteum)*
	Charonia lampas (= Ch. rubicunda = Ch. nodifera)
	Charonia tritonis (= Ch. seguenziae)
	Dendropoma petraeum
	Erosaria spurca
	Gibbula nivosa
	Lithophaga lithophaga
	Luria lurida (= Cypraea lurida)
	Mitra zonata
	Patella ferruginea
	Patella nigra
	Pholas dactylus
	Pinna nobilis
	Pinna rudis (= P. pernula)
	Schilderia achatidea
	Tonna galea
	Zonaria pyrum
Crustacea	*Ocypode cursor*
	Pachylasma giganteum
Pisces	*Acipenser naccarii*
	Acipenser sturio
	Aphanius fasciatus
	Aphanius iberus
	Cetorhinus maximus
	Carcharodon carcharias
	Hippocampus ramulosus
	Hippocampus hippocampus
	Huso huso
	Lethenteron zanandreai
	Mobula mobular
	Pomatoschistus canestrinii
	Pomatoschistus tortonesei
	Valencia hispanica
	Valencia letourneuxi
Reptiles	*Caretta caretta*
	Chelonia mydas
	Dermochelys coriacea
	Eretmochelys imbricata
	Lepidochelys kempii
	Trionyx triunguis

Aves	*Pandion haliaetus*
	Calonectris diomedea
	Falco eleonorae
	Hydrobates pelagicus
	Larus audouinii
	Numenius tenuirostris
	Phalacrocorax aristotelis
	Phalacrocorax pygmaeus
	Pelecanus onocrotalus
	Pelecanus crispus
	Phoenicopterus ruber
	Puffinus yelkouan
	Sterna albifrons
	Sterna bengalensis
	Sterna sandvicensis
Mammalia	*Balaenoptera acutorostrata*
	Balaenoptera borealis
	Balaenoptera physalus
	Delphinus delphis
	Eubalaena glacialis
	Globicephala melas
	Grampus griseus
	Kogia simus
	Megaptera novaeangliae
	Mesoplodon densirostris
	Monachus monachus
	Orcinus orca
	Phocoena phocoena
	Physeter macrocephalus
	Pseudorca crassidens
	Stenella coeruleoalba
	Steno bredanensis
	Tursiops truncatus
	Ziphius cavirostris

Annex (4):
the main species to be regulated in accordance with Annex III to the Barcelona Convention

Porifera	*Hippospongia communis*
	Spongia agaricina
	Spongia officinalis
	Spongia zimocca
Cnidaria	*Antipathes sp. plur.*
	Corallium rubrum
Echinodermata	*Paracentrotus lividus*
Crustacea	*Homarus gammarus*
	Maja squinado
	Palinurus elephas
	Scyllarides latus
	Scyllarus pigmaeus
	Scyllarus arctus
Pisces	*Alosa alosa*
	Alosa fallax
	Anguilla anguilla
	Epinephelus marginatus
	Isurus oxyrinchus
	Lamna nasus
	Lampetra fluviatilis
	Petromyzon marinus
	Prionace glauca
	Raja alba
	Sciaena umbra
	Squatina squatina
	Thunnus thynnus
	Umbrina cirrosa
	Xiphias gladius

Appendix (5):

List of species of reptiles and amphibians that presented in the declaration proposed study including the status of these species locally (Baha El Din 1999)

English name	Latin name	Local status
Green Toad	*Bufo viridis*	Present
Tripoli Gecko	*Tropiocolotes tripolitanus*	Probable
Gecko	*Stenodactylus mauritanicus*	Present
Moorish Gecko	*Tarentola mauritanica*	Common
Turkish Gecko	*Hemidactylus turcicus*	Common
Changeable Agama	*Trapelus mutabilis*	Present
Bosc's Lizard	*Acanthodactylus boskianus*	Common
Nedua Lizard	*Acanthodactylus scutellatus*	Common
Egyptian Leopard Lizard	*Acanthodactylus pardalis*	Rare
Small-spotted Lizard	*Mesalina guttulata*	Common
Oliver's Lizard	*Mesalina olivieri*	Common
Red-spotted Lizard	*Mesalina rubropunctata*	Present
Snake-eyed Lizard	*Ophisops elegans*	Uncommon
Desert Monitor	*Varanus griseus*	Present
Common Chamaeleon	*Chamaeleo chamaeleon*	Common
Ocellated Skink	*Chalcides ocellatus*	Common
Audouin's Skink	*Sphenops sepsoides*	Common
Gold Skink	*Eumeces schneiderii*	Present
Common Skink	*Scincus scincus*	Probable
Snake	*Leptotyphlops macrorhynchus*	Probable
Snake	*Coluber rogersi*	Present
Diademed Sand Snake	*Lytorhynchus diadema*	Common
Snake	*Macroprotodon cucullatus*	Present
Hooded Snake	*Malpolon moilensis*	Present
Montpelier's Snake	*Malpolon monspessulanus*	Present
Sand Snake	*Psammophis schokari*	Common
Sand Boa	*Eryx jaculus*	Rare
Egyptian Cobra	*Naja haja*	Present
Clliford's Snake	*Spalerosophis diadema*	Present
Cat Snake	*Telescopus dhara*	Probable
Horned Viper	*Cerastes cerastes*	Common
Sand Viper	*Cerastes vipera*	Common
Egyptian Tortoise	*Testudo kleinmanni*	Extinct ?
Loggerhead Turtle	*Caretta caretta*	Present

Appendix (6):
List of bird species of in the proposed declaration study with the status list of these species locally (Baha El Din 1999)

English name	Latin name	Local status
Ostrich	*Struthio camelus*	Extinct
Mediterranean Sheerwater	*Puffinus yelkouan*	PV
Cory's Sheerwater	*Calonectris diomedea*	PV
Cormorant	*Phalacrocorax carbo*	PV WV
Shag	*Phalacrocorax aristotelis*	RB?
Great-creasted Grebe	*Podiceps cristatus*	WV
Black-necked Grebe	*Podiceps nigricollis*	WV
Eurasian Wigeon	*Anas penelope*	PV
Green-winged Teal	*Anas crecca*	PV
Mallard	*Anas platyrhynchos*	PV
Northern Pintail	*Anas acuta*	PV
Garganey	*Anas querquedula*	PV
Northern Shoveler	*Anas clypeata*	PV
Greater Flamingo	*Phoenicopterus ruber*	PV
Little Egret	*Egretta garzetta*	PV
Grey Heron	*Ardea cinerea*	PV
Purple Heron	*Ardea purpurea*	PV
Cattle Egret	*Bubulcus ibis*	PV
Black-crowned Night-Heron	*Nycticorax nycticorax*	PV
Little Bittern	*Ixobrychus minutus*	PV ?
Glossy Ibis	*Plegadis falcinellus*	PV?
White Stork	*Ciconia ciconia*	PV?
Osprey	*Pandion haliaetus*	PV
European Honey-buzzard	*Pernis apivorus*	PV
Black Kite	*Milvus migrans*	PV
Western Marsh-Harrier	*Circus aeruginosus*	PV
Eurasian Sparrowhawk	*Accipiter nisus*	PV
Common Buzzard	*Buteo buteo*	PV
Long-legged Buzzard	*Buteo rufinus*	WV?
Eurasian Kestrel	*Falco tinnunculus*	RB PV WV
Red-footed Falcon	*Falco vespertinus*	PV
Merlin	*Falco columbarius*	WV
Eurasian Hobby	*Falco subbuteo*	PV
Lanner Falcon	*Falco biarmicus*	RB?
Peregrine Falcon	*Falco peregrinus*	PV
Barbary Partridge	*Alectoris barbara*	Extinct
Common Quail	*Coturnix coturnix*	PV
Water Rail	*Rallus aquaticus*	PV
Corn Crake	*Crex crex*	PV
Spotted Crake	*Porzana porzana*	PV
Common Moorhen	*Gallinula chloropus*	PV

Eurasian Coot	*Fulica atra*	PV
Common Crane	*Grus grus*	PV
Houbara Bustard	*Chlamydotis undulata*	Extinct ?
Common Snipe	*Gallinago gallinago*	PV
Eurasian Curlew	*Numenius arquata*	WV
Spotted Redshank	*Tringa erythropus*	PV
Common Redshank	*Tringa totanus*	WV
Marsh Sandpiper	*Tringa stagnatilis*	PV
Common Greenshank	*Tringa nebularia*	PV
Green Sandpiper	*Tringa ochropus*	PV
Wood Sandpiper	*Tringa glareola*	PV
Common Sandpiper	*Actitis hypoleucos*	PV
Little Stint	*Calidris minuta*	PV WV
Dunlin	*Calidris alpina*	PV WV?
Curlew Sandpiper	*Calidris ferruginea*	PV
Ruff	*Philomachus pugnax*	PV
Eurasian Thick-knee	*Burhinus oedicnemus*	RB
Black-winged Stilt	*Himantopus himantopus*	PV
Pied Avocet	*Recurvirostra avosetta*	PV
Cream-colored Courser	*Cursorius cursor*	PV RB
Collared Pratincole	*Glareola pratincola*	PV
Black-bellied Plover	*Pluvialis squatarola*	PV WV?
Common Ringed Plover	*Charadrius hiaticula*	PV
Little Ringed Plover	*Charadrius dubius*	PV
Kentish Plover	*Charadrius alexandrinus*	RB PV WV
Eurasian Dotterel	*Charadrius morinellus*	WV
Northern Lapwing	*Vanellus vanellus*	PV
Lesser Black-backed Gull	*Larus fuscus*	PV WV
Black-headed Gull	*Larus ridibundus*	PV
Audouin's Gull	*Larus audouinii*	WV RB?
Yellow-legged Gull	*Larus cachinnans*	WV RB?
Slender-billed Gull	*Larus genei*	PV WV
Whiskered Tern	*Chlidonias hybridus*	PV
White-winged Tern	*Chlidonias leucopterus*	PV
Black Tern	*Chlidonias niger*	PV
Little Tern	*Sterna albifrons*	RB?
Crowned Sandgrouse	*Pterocles coronatus*	RB?
Rock Dove	*Columba livia*	RB
European Turtle-Dove	*Streptopelia turtur*	PV
Laughing Dove	*Streptopelia senegalensis*	RB
Common Cuckoo	*Cuculus canorus*	PV
Pharaoh Eagle-Owl	*Bubo ascalaphus*	RB?
Little Owl	*Athene noctua*	RB
Short-eared Owl	*Asio flammeus*	PV
Eurasian Nightjar	*Caprimulgus europaeus*	PV
Common Swift	*Apus apus*	PV

Pallid Swift	*Apus pallidus*	PV RB?
Common Kingfisher	*Alcedo atthis*	PV
Blue-cheeked Bee-eater	*Merops persicus*	PV
European Bee-eater	*Merops apiaster*	PV
European Roller	*Coracias garrulus*	PV
Eurasian Hoopoe	*Upupa epops*	PV RB
Eurasian Wryneck	*Jynx torquilla*	PV
Brown-necked Raven	*Corvus ruficollis*	RB
Eurasian Golden-Oriole	*Oriolus oriolus*	PV
Red-backed Shrike	*Lanius collurio*	PV
Lesser Grey Shrike	*Lanius minor*	PV
Southern Grey Shrike	*Lanius meridionalis*	RB
Woodchat Shrike	*Lanius senator*	PV
Rock-Thrush	*Monticola saxatilis*	PV
Blue Rock Thrush	*Monticola solitarius*	WV
Eurasian Blackbird	*Turdus merula*	PV WV
Song Thrush	*Turdus philomelos*	PV WV
Fielfare	*Turdus*	WV
Spotted Flycatcher	*Muscicapa striata*	PV
European Pied Flycatcher	*Ficedula hypoleuca*	PV
Collared Flycatcher	*Ficedula albicollis*	PV
European Robin	*Erithacus rubecula*	WV
Common Nightingale	*Luscinia megarhynchos*	PV
Bluethroat	*Luscinia svecica*	PV WV?
Rufous Bush-Robin	*Cercotrichas galactotes*	PV RB
Black Redstart	*Phoenicurus ochruros*	WV
Common Redstart	*Phoenicurus phoenicurus*	PV
Whinchat	*Saxicola rubetra*	PV
Stonechat	*Saxicola torquata*	WV
White-tailed Wheatear	*Oenanthe leucopyga*	RB
Northern Wheatear	*Oenanthe oenanthe*	PV
Mourning Wheatear	*Oenanthe lugens*	RB?
Black-eared Wheatear	*Oenanthe hispanica*	PV
Desert Wheatear	*Oenanthe deserti*	WV RB
Isabelline Wheatear	*Oenanthe isabellina*	WV
Red-rumped Wheatear	*Oenanthe moesta*	FB?
Sand Martin	*Riparia riparia*	PV
Eurasian Crag-Martin	*Hirundo rupestris*	PV
Barn Swallow	*Hirundo rustica*	PV
Red-rumped Swallow	*Hirundo daurica*	PV
Common House-Martin	*Delichon urbica*	PV
Sedge Warbler	*Acrocephalus schoenobaenus*	PV WV?
Eurasian Reed-Warbler	*Acrocephalus scirpaceus*	PV
Marsh Warbler	*Acrocephalus palustris*	PV
Great Reed-Warbler	*Acrocephalus arundinaceus*	PV
Olivaceous Warbler	*Hippolais pallida*	PV

Willow Warbler	*Phylloscopus trochilus*	PV
Common Chiffchaff	*Phylloscopus collybita*	WV
Bonelli's Warbler	*Phylloscopus bonelli*	PV
Wood Warbler	*Phylloscopus sibilatrix*	PV
Blackcap	*Sylvia atricapilla*	PV
Greater Whitethroat	*Sylvia communis*	PV
Lesser Whitethroat	*Sylvia curruca*	PV
Rueppell's Warbler	*Sylvia rueppelli*	PV
Sardinian Warbler	*Sylvia melanocephala*	WV
Subalpine Warbler	*Sylvia cantillans*	PV
Spectacled Warbler	*Sylvia conspicillata*	WV
Marmora's Warbler	*Sylvia marmara*	AV
Bar-tailed Lark	*Ammomanes cincturus*	RB
Greater Hoopoe-Lark	*Alaemon alaudipes*	RB
Thick-billed Lark	*Ramphocoris clotbey*	RB?
Bimaculated Lark	*Melanocorypha bimaculata*	PV?
Greater Short-toed Lark	*Calandrella brachydactyla*	PV
Lesser Short-toed Lark	*Calandrella rufescens*	RB
Dupont's Lark	*Chersophilus duponti*	RB
Crested Lark	*Galerida cristata*	RB
Thekla Lark	*Galerida theklae*	RB
Sky Lark	*Alauda arvensis*	WV
Temminck's Lark	*Eremophila bilopha*	RB
House Sparrow	*Passer domesticus*	RB
Spanish Sparrow	*Passer hispaniolensis*	PV WV
White Wagtail	*Motacilla alba*	PV WV
Yellow Wagtail	*Motacilla flava*	PV
Gray Wagtail	*Motacilla cinerea*	PV
Tawny Pipit	*Anthus campestris*	PV
Tree Pipit	*Anthus trivialis*	PV
Meadow Pipit	*Anthus pratensis*	WV
Red-throated Pipit	*Anthus cervinus*	PV WV
Water Pipit	*Anthus spinoletta*	WV
Eurasian Linnet	*Carduelis cannabina*	WV
Ortolan Bunting	*Emberiza hortulana*	PV?
Corn Bunting	*Emberiza calandra*	WV

Status codes are as follows:
PV= passage visitor, WV= winter visitor, RB= resident breeder,
MB= migrant breeder, CB= casual breeder, AV= accidental visitor;
"?" denotes some uncertainty about status.

Appendix (7):
List of mammals species which presented in the proposed declaration study with status of these species locally (Baha El Din 1999)

English name	Latin name	Local status
Arabian Horseshoe Bat	*Rhinolophus clivosus*	Present
Kuhl's Pipistrelle	*Pipistrellus kuhlii*	Present
Long-eared Hedgehog	*Hemiechinus auritus*	Common
Desert Hedgehog	*Paraechinus aethiopicus*	Uncommon
Lesser White-toothed Shrew	*Crocidura suaveolens*	Present
Cape Hare	*Lepus capensis*	Common
Anderson's Gerbil	*Gerbillus andersoni*	Common
Lesser Gerbil	*Gerbillus gerbillus*	Common
North African Gerbil	*Gerbillus campestris*	Common
Simon's Gerbil	*Gerbillus simoni*	Present
Charming Gerbil	*Gerbillus amoenus*	Present
Henley's Gerbil	*Gerbillus henleyi*	Common
Libyan Jird	*Meriones libycus*	Common
Shaw's Jird	*Meriones shawi*	Common
Fat-tailed Jird	*Pachyuromys duprasi*	Uncommon
Fat Sand Rat	*Psammomys obesus*	Common
Mole Rat	*Spalax(ehrenbergi)*	Rare
Black Rat	*Rattus rattus*	Common
House Mouse	*Mus musculus*	Common
Garden Dormouse	*Eliomys quercinus*	Uncommon
Lesser Jerboa	*Jaculus jaculus*	Common
Greater Jerboua	*Jaculus orientalis*	Uncommon
Four-toed Jerboua	*Allactaga tetradactyla*	Rare
Crested Porcupine	*Hystrix cristata*	Extinct
Jackal	*Canis aureus*	Uncommon
Red Fox	*Vulpes vulpes*	Common
Striped Weasel	*Poecilictis libyca*	Rare
Striped Hyaena	*Hyaena hyaena*	Extinct?
Wild Cat	*Felis sylvestris*	Present?
Cheetah	*Acinonyx jubatus*	Extinct *
Mediterranean Monk Seal	*Monachus monachus*	(Extinct ?)
Dorcas Gazelle	*Gazella dorcas*	Rare
Scimitar Horned Oryx	*Oryx damah*	Extinct *
Addax	*Addax nasomaculatus*	Extinct *

* Probably existed in the region in the not too distant past.

Annex (8):

List of endangered species internationally and locally which presented in the proposed declaration study and status of these species locally (Baha El Din 199)

SPECIES	GLOBAL STATUS (IUCN 2008)	NATIONAL STATUS (PROPOSED)
Reptiles		
Acanthodactylus pardalis	VU	VU
Varanus griseus	-	LR
Eryx jaculus	-	VU
Testudo kleinmanni	CR	(EX)
Caretta caretta	EN	EN
Birds		
Falco naumanni	VU	VU
Chlamydotis undulata	VU	(EX)
Crex crex	NT	VU
Oenanthe moesta	LC	EN
Mammals		
Eliomys melarnurus	LC, 2006	LR
Jaculus orientalis	LC	VU
Aleactaga tetradactyla	VU	CR
Acinonyx jubatus	VU	EX
Monachus monachus	CR	
Gazella dorcas	VU	EX
Oryx dammah	EW	EX
Addax nasomaculatus	CR	EX

Threat status based on IUCN (2008) Red List:
EX= Extinct, EW Extinct in the wild, CR= Critically Endangered,
EN= Endangered, VU= Vulnerable, LC= Least Concern,
DD= Data Deficient, NE= Not Evaluated.

UN environment
United Nations
Environment Programme

MAP
Mediterranean Action Plan
Barcelona Convention

The Mediterranean
Biodiversity
Centre
SPA / RAC

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