

Ministry of State for Environmental Affairs  
Egyptian environmental Affairs Agency (E.E.A.A.)  
*Nature Conservation Sector (NCS)*



# **WHITE DESERT PROTECTED AREA MANAGEMENT PLAN**



**(NATIONAL PARK PROTECTED AREA)**  
(Draft version)  
**2007**

*Prepared by: Ahmed salama  
: Khaled Allam*

### **Acronyms and Abbreviations**

AOP: Annual Operation Plan

EIA: Environmental Impact Assessment

NCS: Nature Conservation Sector

E.EA.A: Egyptian Environmental Affairs Agency

IUCN: International Union for Conservation of Nature (World Conservation Union)

PAMU: Protected Area Management Unit

WDNP: White desert national park

WDPA: White Desert Protected Area

NCSCB: Nature Conservation Sector Capacity Building Project

NGO = Non-Governmental Organization

## Management plan for White Desert National Park

<b>Contents</b>	<i>Page</i>
<b>Executive Summary -----</b>	<b>4</b>
<b>1. Introduction -----</b>	<b>6</b>
1.1 Purpose of the Plan -----	7
1.2 Steps to prepare the Plan -----	7
1.3 Planning Period -----	9
1.4 Plan Structure -----	9
1.5 Values and the importance of the White Desert -----	9
1.6 Vision Statement -----	10
<b>2. Description of Resources</b>	
<b>2.1 Physical Description -----</b>	<b>11</b>
2.1.1 General Description -----	11
2.1.2 Climate -----	11
2.1.3 Geomorphology and Topography -----	11
2.1.4 Geology -----	12
2.1.5 Hydrology and Drainage resources -----	14
2.2 Biodiversity Resources	
2.2.1 Habitats -----	14
2.2.2 Species -----	14
2.3 Cultural Heritage Resources -----	17
2.4 Existing Land Uses, economic aspects and population -----	17
2.5 WDPA Stakeholders -----	17
<b>3. Management Goals and Objectives -----</b>	<b>19</b>
3.1 IUCN Protected Area Management Category -----	19
3.2 National Objectives for Protected Areas -----	20
3.3 WDNP Management Goals -----	21
<b>4. Management Issues, objectives and Actions -----</b>	<b>22</b>
4.1 Preservation of Geology, and landscape -----	22
4.2 Local community development -----	22
4.3 Development of ecotourism projects -----	23
4.4 Visitor management -----	24
4.5 Public Awareness -----	25
4.6 Low quality guides -----	25
4.7 Solid Waste management -----	26
4.8 Collection of Fossils and Prehistoric tools -----	26
4.9 Protect archaeological sites -----	27
4.10 Collecting wild plants for use as fuel -----	27
4.11 Exotic plants -----	28

4.12 Off road tracks -----	28
4.13 Writing on the rocks -----	29
4.14 loss of traditional knowledge -----	29
4.15 Visitor safety -----	29
4.16 Roads -----	30
<b>5. Management Tools -----</b>	<b>31</b>
5.1 Zoning -----	31
5.2 Patrolling -----	33
5.3 Law Enforcement -----	34
5.4 Environmental Impact Assessment (EIA) -----	34
5.5 Licensing / Permits -----	34
5.6 Reporting -----	35
5.7 Public Education and Information -----	35
5.8 Signs and Signposting -----	35

## **Executive Summary**

All economic development activities in Egypt are dependent to some extent on the natural resource base. The Egyptian's natural resources have been the main pillar for a future development programme for tourism, which is an increasingly important source of Government revenue. However, excessive development, unregulated activities, and incompatible use can degrade the natural resources and put economic investments at risk. This plan therefore attempts to provide a pragmatic management approach to aim at establishing equilibrium between sustainable economic development and resource conservation. White Desert protected area is one of 27 PAs in Egypt that considered as one of the most important promising sites that attracts many tourists to Egypt because of its unique, fascinating natural resource.

A management plan is a tool for determining and implementing objectives and priorities that ultimately seek to find a balance between conservation and the needs of local people. This document represents a draft plan to manage the natural and cultural resources within White Desert Protected Area (WDPA), which established by Prime Ministerial Decree 1120/2002. This declared as a protected area (PA) by the Government of Egypt to ensure that existing and future pressures on the area's natural values managed within an ecologically sustainable framework, maintaining the traditional and characteristic culture of the local population. This management plan designed to ensure the conservation and sustainable development of the natural and cultural resources of White Desert Protected Area and bring local and national benefits to the people of Egypt. The plan aims to protect critical habitats and historical sites, assist community programmes and to establish appropriate management infrastructure. This plan intended to provide a frame of reference for decision making to guide the development and management of the protected area over the next 5 years. It lays out the goals and objectives for the protectorate and general courses of actions to achieve them. All proposed WDPA goals and objectives formulated according to the national conservation goals set out in the National Biodiversity Strategy and parallel to the international PA management standards established by IUCN. Management issues identified, along with proposed policies and actions adopted by the NCS of the Egyptian Environmental Affairs Agency (EEAA). However, it is not a detailed or rigid plan; it allows for an adaptive approach to its implementation, which should be achieved through the development of annual operational plans.

According to the law 102/1983 (Law for the Natural Protectorates), the NCS/EEAA is the governmental agency that legally obliged to manage the PA and apply the relevant legal requirements that fulfill the national conservation objectives. This management plan is set to help the NCS/EEAA staff working

within WDPA to ensure that they will be able to apply effective management of the existing natural resources.

Many management issues have been identified which include problems that critically could degrade the natural resources values of WDPA, as well as opportunities such as development of ecotourism, obligations for the protected area, visitor management, etc. WDPA will need to recruit about 25 staff members during the next 5 years to effectively manage the PA's resources and achieve objectives.

This plan is flexible one and should be regularly updated and reviewed every 5 years. A yearly Operational Plan Should developed by the PAMU to translate this plan into practical and measurable actions and targets, associated with a detailed budget.

The main management goals for WDPA set forth here are:

- Protect and maintain sustainable ecosystem functions and cultural integrity while providing traditional and modern uses in the area.
- Protect cultural heritage resources of the PA;
- Promote the sustainable use of natural resources in protected areas and the establishment of appropriate management systems
- To prevent all actions that is likely to result in resource degradation and loss of biodiversity.
- Increased economic and social benefit of local people of the natural heritage area to the maximum extent.
- Promote public awareness and understanding the importance of the natural heritage of WDNP.

## 1. Introduction

Egypt has declared its commitment to enhancing environmental quality and the promotion of the sustainable use of its natural resources as a strategic choice for the future of the country. The Government of Egypt has adopted a National Biodiversity Strategy and Action Plan (NCS 1998), which call for the establishment and maintenance of a representative PA Network in the country.

Egypt's drive towards rational and sustainable use of its natural resources, the White Desert Protected Area (WDPA) was declared in January 2002 by Prime Ministerial decree 1120 / 2002 under Law 102 / 1983 concerning PAs, making it the 23th PA to be declared in Egypt to date. This was the outcome of technical units of NCS in cooperation with the NVG.

The White Desert encompasses one of the most unique, and attractive landscapes of Egypt and the world. The White Desert fascinating limestone erosional features formed by wind and sand, have created a spectacular landscape of outstanding natural beauty, and made the region a world famous spectacle. The White Desert National Park (WDNP) includes a high diversity of morphological and landscape features such as the cliffs forming the northern edge of the Farafra Depression, dunes extending from the great sand sea, the vegetated Wadi Hennis and small-uninhabited oases at Ain El Maqfi and Ain El Wadi. These Wadis are great importance value for biological diversity conservation. The area is one of the refuges for several highly endangered key species in Egypt and on a global level, including the highly endangered slender – horned *Gazella leptoceros*, and threatened Dorcas Gazelle *Gazella dorcas*. WDNP with its natural heritage resources are still intact. However, the Western Desert oases become focal points for development in Egypt lately, which will inevitably lead to alteration of the natural state of the White Desert area. The NCS recommended the need for additional planning for WDNP due to its distinguishing characteristics and significance to recreation. As part of

White Desert National Park (WDNP) is located in the northern part of Farafra Oasis (New Valley governorate) in Western Desert, It represents an important natural value to attract ecotourism, environmental education, recreational and source of income for the local communities of both governorates of New Valley (Farafra Oasis) and Giza (Bahariya oasis), which depends on tourism. Uniqueness of the WDNP natural resources is qualifying to be within a network of natural reserves in Egypt, and from this perspective, it is NCS initiative in the preparation of a plan for managing it with local community involvement and working together to protect important natural resources for sustainable ecotourism.

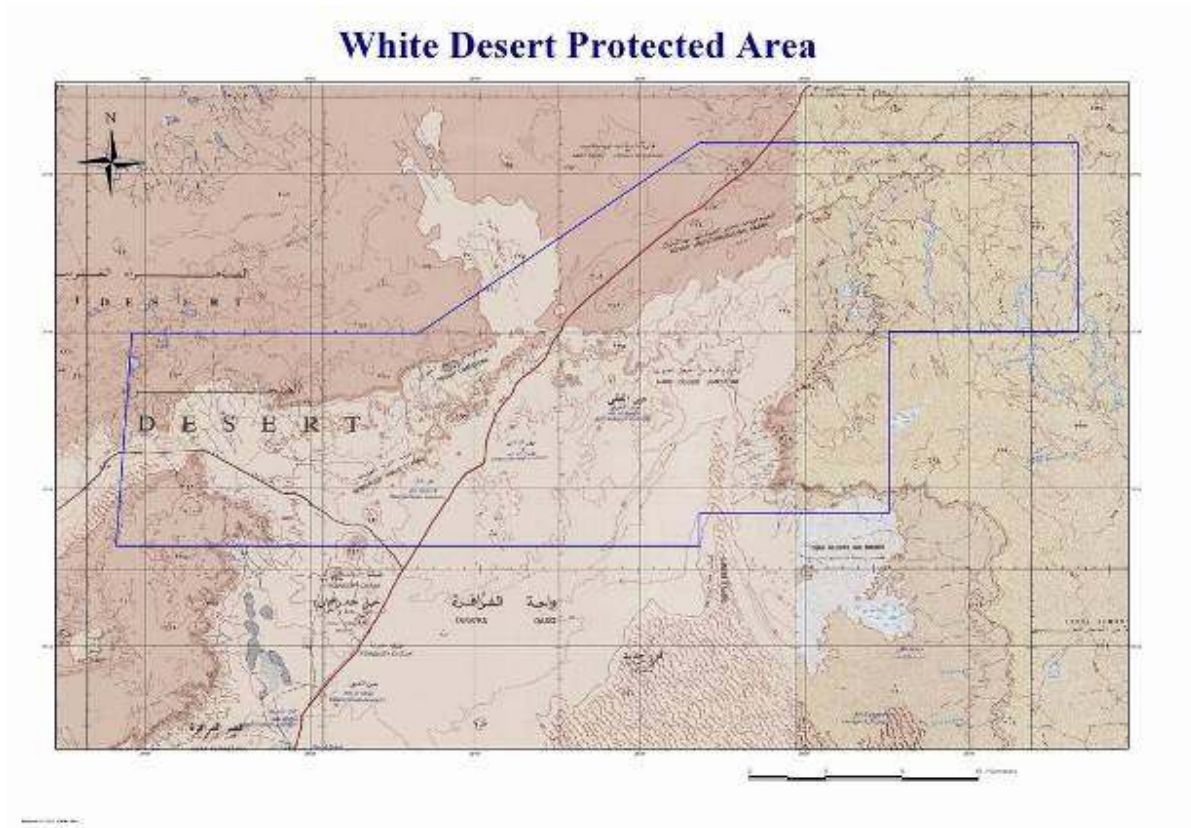


Fig 1. White Desert Natuional Park Boundaries

## 1.1 Purpose of the Plan

The WDNP management plan aims at facilitating the fulfillment of the PA's main objectives, through ensuring that existing and future pressures on the natural resources are managed within an ecologically sustainable framework, maintaining the traditional and characteristic culture of the local community.

Specifically the plan provides a review of the most important resources, opportunities and problems in the PA, based upon which management policies and specific actions are identified within a comprehensive framework. Zoning is a primary management tool, with guidelines provided for specific zones. It has also been reviewing management tools and resources in detail and prepares guidelines for application, financing and evaluation.

## 1.2 Steps to prepare the plan:

Steps have started preparing this plan to hold a workshop in the Society for Community Development in Farafra, during 21-22of November 2005. This workshop is the first of its kind in Egypt. The important of workshop back to partnership with local community, in planning for the management of



protectorates. The workshop organized by support from capacity building project in NCS with PAMU. Invited to workshop representatives of local communities, from oases and NGOs, and the stakeholders as well as tourism companies active in the region as the total of participants 42, the second follow-up and outline of the WDNP management plan workshop has been holding in June 2006 and the first plan was reviewed and discussed and collect comments, which were later incorporated. Local communities' representatives had participated in mapping the tracks within protected area in the month of September 2006 as part of the training of drivers and guides working in the region.

The aim of this workshops is to interact with the community and the activation of the participation of interested people and beneficiaries of the WDPa in the management of area and to identify problems and addressing issues that stand and make proposals for solutions to these issues, as well as defining the role of each party in the implementation of those solutions and management resources of the region and terms, is the first step in order to develop a management plan for WDPa.

The NCS and NCSCB project for the first time, the experience begins for preparing a management plan for protected with participation of beneficiaries and the local population in the region. The plan reviews the main purpose of the establishment of protected area and main goal, as well as the category under which protected area. The plan sets management strategies and policies that should be adopted to achieve this primary goal and complementarity with the whole network of protected areas and strategic nature protection over five years.

The First draft of WDNP management plan has produced in April 2006, in Arabic in accordance with the objectives of the Nature Conservation Sector. In this draft management plan, the main priorities for protection of resources, were identified and the required actions for the proper management. The planning unit team has taken the following steps to complete the plan:

Phase (1): Preparation and coordination with the local community to establish a workshop to familiarize them with natural resources and the important issues facing the conservation of the WDNP.

Phase (2): Collection of information; the planning team have been identified and collect necessary information sources available and whether this information in the form of reports or research or published books, or through interviews with stakeholders and at this stage was providing a base of information allows for the completion of this work.

Phase (3): Field visits; this is the critical stage of collection, the information necessary and update existing information, as well as to design and test management plan proposed in terms of zoning system and visitors management and dealing with various administrative problems.

Phase (4): At this stage the team has been introduced to all the information and compiling this information for the preparation for the final report. Then the planning team prepare presentations about the final draft report to head of NCS and the private consultants for review and comment.

### **1.3 Planning Period**

WDNP management plan needs for a comprehensive review every five years. However, as situations change over time and new information becomes available, it is essential that some sections of this planning document are regularly updated as required and need to be reviewed. The operational period for this management plan is five years, from 2006 to 2011.

### **1.4 Plan structure**

Management Plan has been prepared in light of recommendations resulting from the workshop held in Wadi Rayan protected Area in 2002, and a workshop held in WDNP in 2005. In terms of sequence and indexing, taking into account the non-repetition and benefit from the experiences of practice in some protectorates. It starts with a description of the PA and its resources and overview of its legal and socio-economic setting, then it reviews proposed management objectives; then it provides an extensive appraisal of management issues along with proposed policies, and actions to address them; followed by an overview of management tools and resources; finally there is a brief discussion of implementation and evaluation.

### **1.5 Values and the importance of the White Desert**

- Aesthetic value of the place is a source of inspiration for the arts and talents.
- Environmental values of wildlife
- Scientific values from geological point of view.
- Economic values, as they represent main source of income for people of oases through ecotourism.
- Spiritual value and are intended to link the spiritual and psychological archaeological and visitors to place, which leads them to repeat the visit.
- Uniqueness and specificity of WDNP resources at the National and International level.
- Historical and archeological value.

## **1.6 Vision statement**

White Desert protected area will provide opportunities for a wide variety of recreational activities and benefits while maintaining compatibility, through education, among differing user groups. Recognizing the area is strongly tied economically and socially to the National Parks of Egypt, the area will continue to contribute to the economic viability and stability of traditional uses as well as to the quality of life for residents. Opportunities for human activities will be provided while protecting or enhancing the area's environment and natural resources such as soils, native vegetation, and wildlife populations.

## **2. Description of Resources**

### **2.1 Physical Description**

#### **2.1.1 General Description**

The White Desert contains one of the most unique, and attractive landscapes of Egypt. The White Desert fascinating limestone erosional features formed by wind and sand, have created a spectacular landscape of outstanding natural beauty, and made the region a world famous spectacle. The WDPA includes a high diversity of morphological and landscape features such as the cliffs forming the northern edge of the Farafra Depression, dunes extending from the great sand sea, the vegetated Wadi Hennis and ,and small uninhabited oases at Ain El Maqfi and Ain El Wadi .These Wadis are great importance value for biological diversity conservation. The area is one of the refuges for several highly endangered key species in Egypt and on a global level, including the highly endangered slender – horned Gazella leptoceros, and threatened Dorcas Gazelle Gazella dorcas.

#### **2.1.2 Climate**

WDPA lies in the arid area; rainfall is very rare or almost non-existent and generally ranging between zeros - 15 millimeter per year. The temperature regime summer is very hot in the day and very low at night in winter. the average maximum temperature is 41.5 C while the average minimum temperature is less than zero.the average monthly evaporation ranges from 7-2 mm/ day during December to 24.1 mm/ day January . The relative humidity generally low, ranging from 5 % in winter and up to 56 % in the summer. The wind direction generally is blowing from the north-west.

#### **2.1.3. Geomorphology and Topography**

The area has been under arid climatic conditions since the very late pleistocene. Hence, erosional processes are mainly due to wind action temperature variation and occasional low rainfall. Vegetation plays a negligible role in the present landform. The general relief of the area is relatively low. The maximum height is about 353 m above sea level at El Qess Abu said and the minimum reaches about 32 m above sea level at wadi Hennis area.

Farafra depression: The Farafra oasis lies within an oval shaped depression, which is bounded by scarps from the eastern, northern and western sides where, as it is open due to the south the longer axis of the depression is 102 km where as its east west axis measured near the middle of the depression is about 90 km. The depression covers an area about 980 km<sup>2</sup>. The floor of the depression is covered

by the Dakhla formation in southern part. Northward covered by chalk of Maestrichtian age (Khoman chalk).

The Karawein sand sheet with some sief dunes on top covers the eastern part of the depression. The altitude of the depression here is about 144 m above sea level at its southern part and decreasing in height northward to only 32 m at Ain El Wadi, Wadi Hennis and Wadi El Maqfi areas these areas are covered by wet sabkha.

#### **2.1.4. Geology**

The rocks exposed in the WDNP are of sedimentary nature and range in age from Cretaceous to recent. The chalk is the oldest rock unit in the Farafra Oasis and covers a considerable part of the depression. This rock unit changes laterally in the direction of Abu Minqar to what is known as Dakhla shale. The chalk is characterized by its snow white colour and the highly jointed nature with secondary calcite fillings by differential weathering. This calcite filling stands as a sharp linear elongated ridge

Stratigraphically they consist of the Khoman chalk (Lower Maastrichtian - Upper Campanian) is characterized by a great number of joints filled with calcite and pyrite concretions. The chalk beds weathered along the joint planes and different white stack features were formed rising tens of meters above the surrounding chalk plain. These are well developed at the northern part of the depression. It consists of different fascinating erosional features of white chalky limestone of Khoman formation. This formation of upper Cretaceous age covers most of the Farafra depression

The main features characteristic of the floor of the depression are

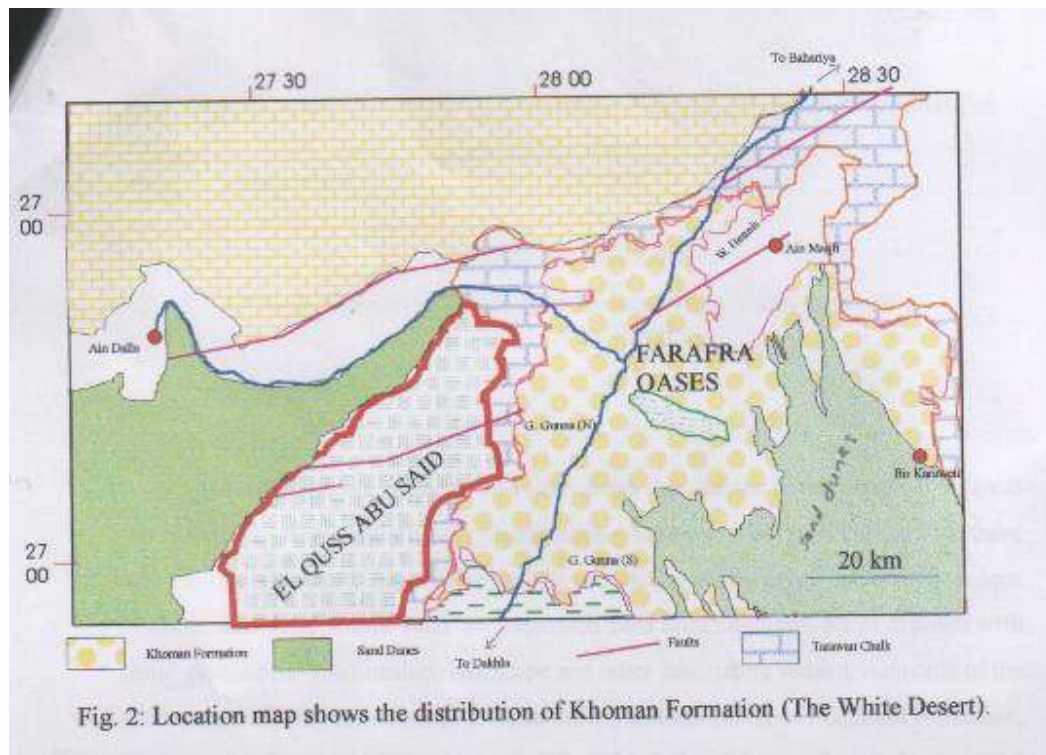
- ◆ Chalk stacks.
- ◆ Inselbergs.
- ◆ Sand dunes.
- ◆ Chalk stacks:

### Chalk stacks:

Erosional remnants of the chalk of all shapes and sizes are very common. The stacks are abundant in the northern part of the depression. The stacks are more common where the direction of prevailing wind is parallel to a set of joints. The surface of the stacks are pitted and sometimes polished. These features are characteristic of wind action.

### Inselbergs :

The most remarkable of these are composed of highly eroded Farafra Limestone on the top and Esna shale forming the slopes. Numerous drainage gullies occur on the steep slopes of the escarpments. In the northern part of the Farafra depression



two drainage gullies are found wadi Hennis and wadi El Maqfi their water table is relatively shallow according they are mostly wet.

### Sand dunes :

Sand dunes cover vast area in the Farafra depression. The sand accumulates in the form of high longitudinal dunes mainly oriented parallel to the prevailing wind. In the northern part of the depression some sand accumulations cover the floor especially at wadi Hennis and wadi El Maqfi it seems that they were deposited during long period of erosion of the source area in the north .

#### Qaret El Sheikh Abdalla :

This is a conspicuous landmark at the surface of the plateau between the Farafra and the Bahariya depression. The hill is a table like feature with its longer axis 1km extending in a north east-south west direction. Chalk of Maestrichtian age is exposed at the base of the hill while Paleocene lime stone forms the upper part. The hill is capped with about 10 m of alluvial cover which mainly consists of gravels, boulders and cobbles from lime stone and chert. On the other hand, talus and lime stone debris occurs along the basal part.

### **2.1.5 Hydrology and Drainage resources**

Wadi El Maqfi is located to the northeast of Qaser Farafra. It trends in 46° E directions parallel to the axis of the Farafra anticline. The length of the wadi is 7.5 km while the width is 0.5 km. On the average the main tributary receives its water from the discharge of Ein El Maqfi. Both banks of the water rise about 20 m above the level of the wadi floor.

## **2.2 Biodiversity Resources**

### **2.2.1 Habitats**

The white desert region has a considerable diversity of desert habitats composed of sand sheets, dunes, wadis, vegetated wadis, uninhabited oases, hills and steep cliffs.

### **2.2.2 Species**

Mammals: there are at least 12 species of mammals and rodents are more prevalent, but perhaps the most visible types of visitors is red fox or sand rubles, which are frequently seen at night near the camps where becoming closer to visitors for food and drink. Also so soon the region contains preparation of the slender horned Gazelle and Barbary Sheep and are globally threatened species and tend to be locally extinct, it can be an important goal for recovery operations and rehabilitation of the region. The mammals have been recorded in the area as following :

English	Latin	Arabic
Slender-horned Gazelle	<i>Gazella leptoceros</i>	غزال أبيض
Dorcas Gazelle	<i>Gazella dorcas</i>	غزال مصري
Barbary Sheep	<i>Ammotragus lervia</i>	كباش أروي
Jackal	<i>Canis aureus</i>	إبن أوى / ذئب

Red Fox	<i>Vulpes vulpes</i>	ثعلب أحمر
Rüppel's Sand Fox	<i>Vulpes rueppelli</i>	ثعلب الرمال / روبل
Fennec Fox	<i>Vulpes zerda</i>	فناك
Sand Cat	<i>Felis margarita</i>	قط الرمال
Lesser Gerbil	<i>Gerbillus gerbillus</i>	بيوضي
Lesser Gerboua	<i>Jaculus jaculus</i>	جربوع
Bat sp.		أنواع الخفاش

Birds: the resident avifauna of WDNP recorded about 24 species of birds living within the park. Perhaps Eurasian Thick-knee bird is the most type widespread in the sandy and gravel landscape. While the Long-legged Buzzard *Buteo rufinus* and Cream-colored Courser *Cursorius cursor* the rarer species, which had migrated every year in the protected area. large numbers of migratory birds pass through WDNP. more than hundred species, mostly in the spring and autumn periods, while a limited number of species remaining to spend the winter before returning north in the summer.



English	Latin	Arabic
Long-legged Buzzard	<i>Buteo rufinus</i>	صقر حوام
Eurasian Kestrel	<i>Falco tinnunculus</i>	صقر الجراد
Sooty Falcon	<i>Falco concolor</i>	صقر الغروب
Lanner Falcon	<i>Falco biarmicus</i>	صقر حر
Barbary Falcon	<i>Falco pelegrinoides</i>	صقر شاهين مغربي
Eurasian Thick-knee	<i>Burhinus oedecnemus</i>	كروان صحراوي
Cream-colored Courser	<i>Cursorius cursor</i>	جليل
Spotted Sandgrouse	<i>Pterocles senegallus</i>	قطا أنقط
Crowned Sandgrouse	<i>Pterocles coronatus</i>	قطا متوج
Rock Dove	<i>Columba livia</i>	حمام جبلي
European Turtle-Dove	<i>Streptopelia turtur</i>	يمام قمري
Laughing Dove	<i>Streptopelia senegalensis</i>	يمام مصري
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	يمام مطوق
Pharaoh Eagle-Owl	<i>Bubo ascalaphus</i>	بوهة
Little Owl	<i>Athene noctua</i>	أم قويق
Brown-necked Raven	<i>Corvus ruficollis</i>	غراب البين
Southern Grey Shrike	<i>Lanius meridionalis</i>	صرد البادية
White-tailed Wheatear	<i>Oenanthe leucopyga</i>	أبلق أبيض التاج / زرزور
Pale Rock-Martin	<i>Hirundo obsoleta</i>	سنونو الصخر الباهت
Bar-tailed Lark	<i>Ammomanes cincturus</i>	قنبرة الصحراء موشمة الذنب
Desert Lark	<i>Ammomanes deserti</i>	قنبرة الصحراء
Greater Hoopoe-Lark	<i>Alaemon alaudipes</i>	مكاء
Crested Lark	<i>Galerida cristata</i>	قنبرة متوجة
Trumpeter Finch	<i>Rhodopechys githaginea</i>	زمير مصري

Reptiles: During survey 2004, we have been recorded approximately 19 species of reptiles and 1 amphibian inside the WDNP. Perhaps Lizard dune is the most widespread type and located in sandy areas and dunes, while the expected presence of a limited number of green frog near water sources. the reptiles recorded in white desert as following:

English	Latin	Arabic
Green Toad	<i>Bufo viridis</i> Laurenti 1768	ضفدعة خضراء
Saharan Fan-toed Gecko	<i>Ptyodactylus siphonorhina</i> Anderson 1896	برص أبو كف صحراوي
Sand Gecko	<i>Stenodactylus petrii</i> Anderson 1896	برص واسع العين رملي
Elegant Gecko	<i>Stenodactylus sthenodactylus</i> (Lichtenstein 1823)	برص واسع العين
Steudner's Pigmy Gecko	<i>Tropicolotes steudneri</i> (Peters 1869)	برص تحت الحجر
Tripoli Pigmy Gecko	<i>Tropicolotes tripolitanus</i> Peters 1880	برص تحت الحجر
Sinai Agama	<i>Pseudotrapelus sinaitus</i>	طرابلسي
Bosc's Lizard	<i>Acanthodactylus boskianus</i> (Daudin 1802)	قاضي سيناء
Long-footed Lizard	<i>Acanthodactylus longipes</i> Boulenger 1918	سحلية خشنة
		سحلية الكتبان

Nidua Lizard	<i>Acanthodactylus scutellatus</i> (Audouin 1829)	سحلية الرمل
Small-spotted Lizard	<i>Mesalina guttulata</i> (Lichtenstein 1823)	سحلية صغيرة النقط
Red Spotted Lizard	<i>Mesalina rubropunctata</i> (Lichtenstein 1823)	سحلية حمراء النقط
Desert Monitor	<i>Varanus griseus</i> (Daudin 1803)	ورل صحراوي
Ocellated Skink	<i>Chalcides ocellatus</i> (Forskål 1775)	دفعان أبو عوينات
Sandfish	<i>Scincus scincus</i> (Linnaeus 1758)	سفنقور
Audouin's Sand-skink	<i>Sphenops sepsoides</i> (Audouin 1829)	دفعان
Diademed Sand Snake	<i>Lytrochilus diadema</i> (Duméril, Bibron & Duméril 1854)	بسباس جبلي
Saharan Sand Snake	<i>Psammophis aegyptius</i> Marx 1958	أبو السبور مصري
Diadem Snake	<i>Spalerosophis diadema</i> (Schlegel 1837)	أرقم أحمر
Horned Viper	<i>Cerastes cerastes</i> (Linnaeus 1758)	أفعى مقرنة
Sand Viper	<i>Cerastes vipera</i> (Linnaeus 1758)	أفعى قرعاء

Plant: the vegetation depends on groundwater primarily. It concentrated in the wadis and around the water spring. Many trees spread around the water springs and wadis such as palm trees. It also includes protected some plants which represent isolated remnants of the types were more prevalent in Egyptian deserts or had previously been introduced by human and biological resources are scarce, threatened and must be preserved carefully, for example, some acacias and some bushes Rambler *Coculus pendulus* as following:

<i>Stipagrostis spinosa</i>
<i>Tamarix nilotica</i>
<i>Cornulaca monacantha</i>
<i>Nitraria retusa</i>
<i>Phoenix dactylifera</i>
<i>Phragmites australis</i>
<i>Calligonum commosum</i>
<i>Desmostachia bipinnata</i>
<i>Coculus pendulus</i>
<i>Acacia nilotica</i>
<i>Acacia raddiana</i>
<i>Salsola</i> sp.
<i>Alhagi graicorum</i>

## 2.3 Cultural Heritage Resources

There are at least four archeological sites within the WDNP. These date back to Roman periods and represented by the remains of old houses in the eastern part, around the water springs at ( Ain maqfi- Ain Al Wadi – Ain Al Sero ), and at Wadi El Obyed in western part of WDNP, besides many prehistoric sites around.

## **2.4 Existing Land Uses, economic aspects and population**

There are no permanent settlements inside the boundaries of the WDPA but there are some small buildings for checkpoint of police and ambulances points, on the main road connect Baharya and farafre oases.

## **2.5 WDNP Stakeholders**

There are a large number of direct and indirect stakeholders and participants in the PA's activities. The main stakeholders and their involvement with the PA are briefly described.



1. Egyptian Environmental Affairs Agency: By law, the EEAA is the competent governmental authority, responsibility and obligation to manage PAs in Egypt.
2. New Valley Governorate: WDNP as a whole falls under the administrative authority of the New Valley Governor, who is the highest authority in the Governorate. The Governorate is responsible for regional planning and development strategies such as housing, road and tourism projects.
3. Higher Council for Antiquities: Has responsibility for surveying and protecting antiquities and archaeological sites.
4. Ministry of Interior: The Ministry of Interior has under its authority the Police (including its various branches). It is the executive authority for Egyptian civil legislation.
5. The General Organization for Roads and bridges: Is responsible for the maintenance of existing roads and construction of new ones.
6. Border Guards: The Border Guards have the responsibility of protecting all border regions of Egypt, including its coasts. Boarder Guards control access to the marine environment, and they request the issuance of permits for non-Egyptian visitors to off road regions of the Eastern Desert.
7. Investors: (hotel owners, tour operators, guides, desert safari companies, etc.).
8. Local communities: The local communities are the traditional users of the natural resource base and as such are among the main stakeholders in the PA; their understanding and support of the PA's objectives and involvement in planning and implementing management interventions are critical. Local communities should be enabled to manage their own resources locally.
9. Ministry of Agriculture:

### 3. Management Goals and Objectives

The management goals and objectives of WDNP need to reflect both national policies and priorities, and local circumstances and needs. In the mean time the PA management should seek to adopt, as much as possible, the established international standards in this field (IUCN). These standards have evolved over many years and reflect an extensive global experience, presenting practical and tested solutions to common management problems.

#### 3.1 IUCN protected area management category

WDNP is designated herein primarily as a National Park (PA managed mainly for ecosystem protection and recreation, IUCN PA management category II). This defines the PA as a “natural area of land and/or sea designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible”.

The selection criteria set out by IUCN for this category is as follows:

IUCN Category	Criteria	Suggested Indicators
<b>II: National Park</b> (managed mainly for ecosystem protection and recreation)	<ul style="list-style-type: none"><li>• The area should contain a representative sample of major natural regions or features of <i>both</i> scientific and tourist significance</li><li>• The area should be large enough to contain one or more entire ecosystems not materially altered by current human occupation or exploitation</li><li>• Usually ownership and management by the highest competent authority of the nation</li></ul>	<ul style="list-style-type: none"><li>• High conservation value</li><li>• Accessibility for tourism</li><li>• Size</li><li>• Threat rating</li><li>• Land ownership/tenure</li><li>• Low or no consumptive use (low livelihoods value)</li></ul>

WDNP fits perfectly the National Park criteria: It is of substantial size, encompassing a unique example of geological formation, landscape and ecosystem not significantly altered by man and largely in pristine natural condition, has outstanding landscape features, holds a significant recreational value and has sites of important spiritual significance..

## **International management objectives**

IUCN outlined the following management objectives for National Parks:

1. To protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational or tourist purposes;
2. To perpetuate, in as natural a state as possible, representative examples of physiographic regions, biotic communities, genetic resources, and species, to provide ecological stability and diversity;
3. To manage visitor use for inspirational, educational, cultural and recreational purposes at a level, which will maintain the area in a natural or near natural state;
4. To eliminate and thereafter prevent exploitation or occupation inimical to the purposes of designation;
5. To maintain respect for the ecological, geomorphologic, sacred or aesthetic attributes which warranted designation;
6. To take into account the needs of indigenous people, including subsistence resource use, in so far as these will not adversely affect the other objectives of management.

### **3.2 National objectives for protected areas**

The National Parks of Egypt (NPE) aims at maintaining the diversity and viability of the various components of Egypt's natural heritage, and to ensure their sustainable utilization, through conserving adequate representative examples of the country's natural ecosystems and landscapes, for the benefit of present and future generations: the intergenerational equity.

The main objectives of the National Parks of Egypt are (adapted from NCS/EEAA policy documents):

1. To conserve representative examples of all the nation's main natural habitats and physiographic regions;
2. To help maintain the nation's biological diversity;
3. To help maintain the nation's ecological viability;
4. To protect the nation's most outstanding landscape features;
5. To optimize socio-economic return from the nation's natural systems in a fashion that ensures their long term sustainable maintenance;
6. To support Egypt's economic development strategies, particularly with regard to sustaining the tourism sector;

7. To protect natural assets as future options available for economic diversification;
8. To promote public understanding and appreciation of Egypt's natural heritage.

### **3.3 WDNP management goals**

WDNP aims at providing protection to the unique and invaluable natural and cultural heritage resources present in the region. It seeks also to facilitate, ensure and promote the wise and sustainable use of these resources, maximizing benefits from the natural conditions and systems that govern the sensitive and valuable ecosystems of the region, and maintaining the traditional and characteristic culture of the indigenous inhabitants and improving their living standards.

The main management goals for WDNP set forth here are:

- Protect and maintain sustainable ecosystem functions and cultural integrity while providing traditional and modern uses in the area.
- Protect cultural heritage resources of the PA;
- Promote the sustainable use of natural resources in protected areas and the establishment of appropriate management systems
- To prevent all actions that is likely to result in resource degradation and loss of biodiversity.
- Increased economic and social benefit of local people of the natural heritage area to the maximum extent.
- Promote public awareness and understanding the importance of the natural heritage of WDNP.
- To Strength WDNP as abase of ecotourism hence expansion and increased diversity in the economic activities in the region to contribute to regional and national development.

#### **4. Management issues, objectives and actions**

This section reviews the main management problems, obligations and opportunities for WDNP, providing specific proposed management objectives, policies, actions for each.

##### **4.1 Preservation of Geology, and landscape**

**Objective:** Preserve the unique geological, and landscape features that found inside WDNP.

**Actions:**

- Establish geological survey and GIS analysis of all collected biological, social and geological data.
- PAMU will not provide any permission for commercial mining and quarrying within protectorates when there are alternative sources of supply in non-protected areas.
- Preparing list for all landscapes inside WDNP, determine the sensitivity of each site and assign those open for visitors and others closed.
- Set regulations to control the usage of natural materials in the building processes within the park to ensure matching of these buildings with the surrounding landscape.
- Any developments or installations within WDNP should provide obligatory full EIAs with clear mention to the impacts on the surrounding natural landscapes.

##### **4.2 Local community development**

**Objective:** Participation of local communities inside WDNP with its management, in co-operation with other stakeholders, to ensure sustainable development of cultural and natural resources within WDNP.

**Action:**

- All infrastructures, be developed in an environmentally responsible manner.
- PAMU seeks to link its infrastructural development program with the needs of its community. This necessitates close linkages with local authorities and communities in maximizing opportunities to provide infrastructure that will be of broader benefit to all stakeholders.
- Social type projects of an educational, health, cultural or recreational nature which is aimed at improving the basic quality of life the inhabitants and



through which a more productive relationship is built between such communities and WDNP.

- Income generating projects focused at groups of individuals with the purpose of generating income through rendering services, manufacturing products such as arts and crafts.
- Facilitating support will be directed primarily at Identifying potential markets and evaluating the capacity and skills base of groups to enable them to engage projects in a sustainable income generating manner and developing such groups through inter alia institutional and management training. Facilitating support could include limited financial support on condition that does not increase the dependence of a community project on WDNP for survival.
- All developments in WDNP must be carefully planned in terms of acceptable socio-economic, socio-political, environmental, and financial impacts.
- Opportunities for community involvement in the operational activities, support services, and profit sharing must be created at the conceptualization stage.
- PAMU will facilitate the establishment of community liaison forums to ensure inclusion of all communities in planning and decision making processes.
- Infrastructure and physical structures should be planned and designed, to maximize opportunities for the use of labour-based construction processes.
- Communities will be encouraged to become part of the environmental management process, firstly by education on the importance to manage the surrounding environment and secondly by playing an active role in this process.

#### **4.3 Development of ecotourism projects**

**Objective:** To ensure that activities in the park, are compatible with the management objectives of WDNP.

**Actions:**

- EEAA and New Valley Governorate should establish a joint committee for the management and planning of the ecotourism projects within the area.
- The joint committee will assess the appropriate number of ecolodge developments permitted maintaining adequate spacing between lodges to ensure the visitor experience, and identify appropriate areas based on carrying capacity studies.
- EIAs will be required for any development.

- All contractors will be obliged to restore the landscapes, as far as possible, before leaving any development site.
- The PAMU will ensure that all solid waste generated be disposed outside WDNP in designated landfill sites.
- The PAMU will ensure that all liquid waste is treated on site.
- The PAMU will prohibit the use of pesticides.
- Utilizing a participatory approach, devise and implement tourism development plan for WDNP, including guidelines, and promotion strategy.
- Identify the appropriate visitor facilities and infrastructure, undertaking the necessary studies prior to establishment.
- The PAMU will develop a plan and system for the maintenance of visitor facilities.

#### **4.4 Visitor management**

**Objective:** To establish sustainable ecotourism activities in WDNP, through a well developed visitor management plan.

##### **Actions:**

- As part of an education and public awareness strategy for WDNP, identify and implement educational and information program for visitors.
- The PAMU will insure that WDNP visitor regulations are widely disseminated.
- Train PAMU staff to be responsive to tourist needs.
- Develop a visitor fee structure and system, as well as licensing and concessions fees for businesses operating in the park that can be reinvested back into the management of the PA.
- The PAMU will seek to reduce negative visitor impacts by regular patrolling of primary attractions and sensitive sites.
- The PAMU will monitor visitor impacts and responses through a comprehensive monitoring program. Impacts from visitors.
- The PAMU will seek visitor's feedback as a means of assessing management effectiveness.
- Coordinate with the Coast Guard Intelligence to allow non-Egyptian tourists to visit WDNP without the need for acquiring a permit.
- In cooperation with the appropriate stakeholders, develop and implement a tourism marketing and promotion strategy for WDNP.
- Involve the local community in tourism activities, such as working as guides, handicraft programs, community-operated ecolodges and providing other goods and services to visitors.

#### **4.5 Public Awareness**

**Objective:** Establishment of a public awareness program by addresses the stakeholders' needs in order to gain their support. Such public awareness program can lead to the empowerment of stakeholders, enabling them to share effectively in decision making with the PA management.

**Actions:**

- Organizing training courses on nature conservation for teachers
- Specialized environmental educational materials to be distributed inside the schools.
- Regular school visits to WDNP.
- Optional voluntary work of students in the protected areas during the summer.
- Regular training courses for community inside WDNP on environmental education and public awareness programs.
- Offering audiovisual facilities on nature conservation and protected areas.
- Setting a schedule for regular meetings between protected area representative and stakeholders. The aim of these meetings is to explore ways to meet the needs of the local communities while maintaining the integrity of protected areas.
- Set up an environmental education program based on the indigenous knowledge for children in primary education. This would aim to inform and engage children through their participation in environmental protection.
- NGOs programs should integrate the previous environmental education and public awareness programs.
- A visitor centre facilities should start quickly inside WDNP, which will help in the provision of information about the PA's programmes in order to improve the overall experience of tourists and reduce any negative impacts resulting from their visits.
- Improving relationships with national and regional media in order to reach a wider and effective way of environmental education.
- Designing of public awareness materials should be representative for each site inside the protected area.

#### **4.6 Low quality guides**

**Objective:** Develop environmental awareness for tour guides and drivers, as well as those managing tourism companies allow effective ways to preserve the resources protected through specific programs being implemented by park.

**Action:**

- Prepare training courses through trained outreach specialists in the field of eco-tourism joint invite representatives of the tourism companies operating Sahara white and Mentors guides and drivers working those companies.
- The production of educational tools and the necessary studies, paintings and maps that serve the goals of raising environmental awareness among this category of users protected.
- The production and distribution of publications and instructions governing the management of visitors within the protected and, through coordination with the Ministry of Tourism and the Chamber of Tourism and tourism companies and individuals to establish joint controls and specifications agreed upon for guides and drivers working within the Western Sahara.

#### **4.7 Solid Waste management**

**Objective:** To insure will prepared management mechanism of solid waste inside WDNP.

**Actions:**

- Publishing and distribution instructions and regulations of WDNP to prevent dumping or burying waste within the park.
- Awareness of the most important principles of waste management and most important of the separation of organic waste (which can be disposed of limited quantities of them within protected), and inorganic, which must be carried outside the boundaries of protected areas.
- Inclusion means waste management to users of the desert within courses for tourism companies and drivers working those companies.
- Organizing clean up campaigns inside the park and around its boundaries with users and the local community, this will be done in the framework of the system to raise environmental awareness.
- Intensify patrols to strengthen the implementation of instructions and monitoring violations and take legal action against offenders who repeated violation.
- Develop a plan for waste management outside protected conjunction with the local community.
- Identify and designate suitable sites for sanitary landfills and borrow pits within specific areas.

#### **4.8 Collection of Fossils and Prehistoric tools:**

**Objectives:** Be sure that the combination of all forms of natural resources protected intercourse, geological and archaeological, biological and serious explicit violation of the law preserves

**Action:**

- Definition and information to users through publications and instructions protected.
- Patrols to monitor the implementation.
- Application of the law on violators.
- Coordination with other administrative bodies to support the implementation of the law.

**4.9 Protect archaeological sites:**

**Objective:** WDNP in cooperation with the Ministry of Culture and the Supreme Council of Antiquities, provide more efforts for the maintenance of natural heritage and cultural heritage within the park.

**Action:**

- Quickly identify archaeological sites to protect it from destruction by visitors must be done in cooperation with the Ministry of Culture (Supreme Council of Antiquities).
- Photographing and recording the status of all known sites within the protected communication, the Supreme Council of Antiquities in the form of a report.
- Organizing and establishing and clarifying the working relationship between the management of protected and the Supreme Council of Antiquities in order to learn how to manage and protect these sites within the protected and ways of dealing with any infraction.
- Develop a plan of archaeological sites within the periodic passage of the protected (and these sites should include Ain Saro, led Hawass, the greenery, appointed function

**4.10 Collecting wild plants for use as fuel:**

**Objectives:** to preserve the content of land plants rely on the prevention of any activity that causes degradation of protected resources, and coordinating with tourism companies operating protected intercourse respect to the use of alternatives and the implementation of environmental protection legislation

**Action:**

- Warning to all companies and individuals and visitors to the protected users need commitment to provide alternatives to wild plants as fuel (wood or coal from outside the borders protected-Boutagazat etc.).

- Coordination with the people of neighboring oases to provide firewood plants planted outside the scope of protected and the possibility of selling at the entrances protected or in the neighboring villages of protected areas, and is what might provide a source of income for some members of the community.
- Protected by patrols to check the non-use plants region.
- Take corrective actions regarding offenders who repeated violation, such as temporary or permanent revocation of the permit companies and individuals committed to others, and may be followed by legal action

#### **4.11 Exotic plants**

**Objective:** Agriculture is the illegal activities of others and undesirable within the scope of protected adverse impact on sensitive natural habitats for wildlife

**Action:**

- Try to regain some of the areas that were destroyed in the past.
- Coordination with the New Valley governorate and the Ministry of Agriculture in order to plan agricultural activities within the protected and the importance of preserving the natural environments by

#### **4.12 Off road tracks**

**Objective:** To control and limit, as far as possible, off-road driving within WDNP.

**Actions:**

- Survey and categorize the different tracks according to their sensitivity to wildlife, and importance to traffic.
- Identify areas that need to be closed completely to avoid critical areas.
- Improve single tracks in critical habitats in order to make it less practical to drive off these tracks.
- Sign posts can be placed at critical points in an aesthetic fashion in order to force drivers to follow a particular route.
- Liaise with safari operators over permitted routes and an enforceable code of conduct
- Posting obvious and easy-to-read instructions with codes of off-road driving at the entrances to important and heavily used tracks, indicating clearly the penalties for misconduct.

#### **4.13 Writing on the rocks**

**Objective:** Prevent and control any activities that lead to destroy the beauty of WDNP landscape through writing on the rocks.

**Action:**

- Alert and awareness of the users and visitors passively writing and maiming of rocks region.
- Work to remove the existing literature (in collaboration with the local community).
- patrols to monitor the implementation.
- punish violators.

#### **4.14 loss of traditional knowledge:**

**Objective:** Preserve the traditional knowledge of the local residents as an inherent part of the heritage of the region, to play an active role in protecting the natural assets.

**Action:**

- Adopts protected program for the preservation and documentation of cultural heritage is implemented by local NGOs local contains the following :
- Collect examples of the heritage of handicrafts and adding special Bouaheh especially those associated with the white desert.
- Allocating part of the Visitors Center to be protected for the presentation and constructive examples of local heritage conservation.
- Documenting and disseminating written and oral heritage.
- All publications and promote the most important elements of protected local cultural heritage

#### **4.15 Visitor safety**

**Objective:** Ensure an acceptable level of safety to visitors against the most likely life threatening incidents in WDNP.

**Actions:**

- Establish an emergency response plan, which should identify the closest hospitals and doctors in the region.
- Other PAMU staff should get training in basic rescue and emergency medical response.

- An emergency phone number should be designated and distributed to visitors. Phone should be attended at all times.
- Conduct awareness campaigns among tour operators and ensure that visitors are aware of the emergency procedures.

#### **4.16 Roads**

**Objective:** Reduce risks from major surfaced roads.

**Actions:**

- The PAMU will liaise closely with Ministry of Public Works and the New Valley Governorate to review road development plans.
- The PAMU will inform maintenance contractors of road construction standards.
- The PAMU will seek to restore road lines of spoil tips resulting from previous maintenance, repair (e.g. broken asphalt), and in the future enforce the removal of such spoil by maintenance contractors.
- Establish informative signs and instructions to alert drivers and passengers that they are in a PA.



## **5. Management Tools**

### **5.1 Zoning**

Zoning any protected area is a basic step in management planning as it divides the assets of the protected area and schematically outlines the type of management regime and development activities appropriate for particular areas. Zoning is done in terms of the level of protection required and follows a gradient from almost no human impact allowed to an intensive use zone where the area may be considerably modified. As zoning is a critical management decision, the disposition of the zones and to some extent their management objectives will have to be negotiated with local communities and government administrative bodies in a participatory manner.

White Desert Protected Area protects certain areas or zones that require different levels of management or protection. The zoning system inside White Desert Protected Area is a resource based approach by which the area is zoned/classified according to its need for protection, level or intensity of management, and its capacity to sustain traditional, public or commercial use. The feasibility and future quality of the protectorate will lie in the strict implementation of the zoning and sectoring use. Uses and activities that differ to those assigned for particular sectors are to be prohibited; if they are current exist.

### **White Desert National Park Zone Descriptions**

WDNP management plan classified the area into the following zones

#### **1. Strict Nature Zone**

It is pristine natural area set aside for the free interaction of ecological factors and fluxes. This zone provides protection with no roads or other forms of modern construction. This area for desert wildlife conservation and it is usually relatively large i.e. up to a hundred square kilometres and remote to serve their purpose. Where appropriate and possible, wildlife corridors that link critical habitats should be zoned in this category. The protection level of this zone is high with zero impact if possible.

Objectives: To ensure the representation and continued existence of all resident flora and fauna elements within the PA in a natural state, to allow for movement of wildlife between critical habitats and to serve as monitoring sites.

Management strategy: No active management other than patrolling, halting of damaging activities, removal of feral species, etc.; only non-manipulative scientific research is allowed.

Access: No public access by vehicles is allowed. Only access on foot is allowed. Any existing tracks will be closed to public access and used only for management purposes.

Camping: No camping allowed.

Public Use: Generally none permitted.

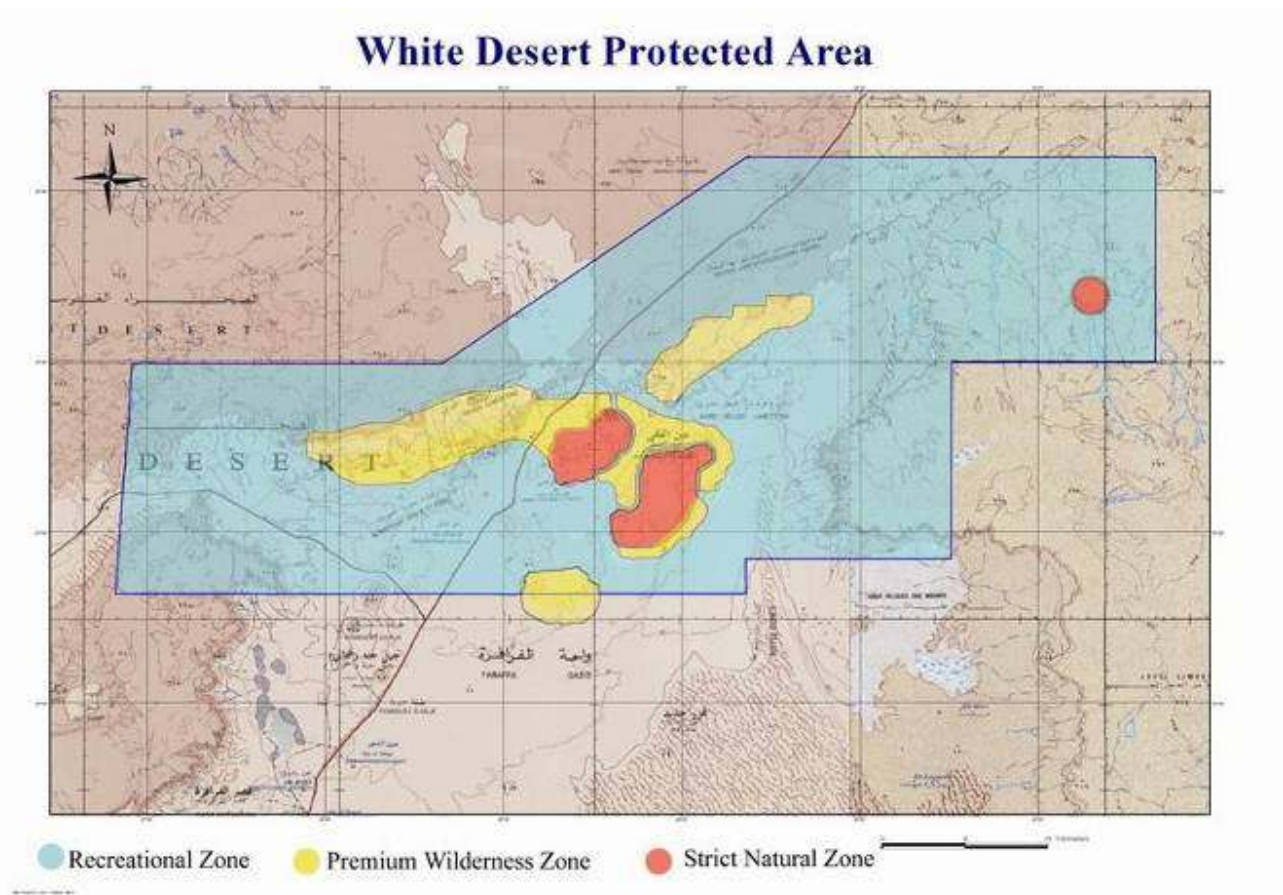


Fig 3. Zoning map of White Desert National Park

## 2. Premium Wilderness Zone

It is a very high value natural area set aside primarily for the use of a limited number of visitors to have a rewarding experience in a remote wilderness area. This area is extensive in size, often made up of several landscape units, free of man-made constructions and to be used only in a way that does not necessitate access roads. Transit corridors for tourists will also be zoned under this category. The protection level of this zone is high protection and minimal impact.

Objectives: The preservation of wilderness environments in a condition as close as possible to their natural states to serve low density, high value/premium wilderness adventure tourism and bring associated benefits to local communities.

Management strategy: To manage the number of visitors (in terms of absolute numbers, group size and number of groups per area), to ensure the preservation of a premium wilderness environment for high value backcountry recreation with limited ecological management.

Access: No public access by vehicles is allowed. Only access on foot or by camel is allowed. Any existing tracks will be closed to public access and used only for management purposes.

Camping: Camping allowed only for camel users and trekkers (outside the White Desert Premium Wilderness Zone).

Development: None.

### **3. Recreational zone**

It is a largely natural area where public access is generally freely allowed but organized to provide visitors with a natural and rewarding experience in the PA. It is large natural area with high scenic and cultural value and of moderate importance for biodiversity conservation. The protection level of this zone is medium level and moderate impact.

Objectives: To provide opportunities for easily accessible backcountry tourism that provides visitors with a rewarding natural experience and generates income for local people.

Management strategy: Active management to maintain natural areas and minimize impacts by installation of facilities, monitoring guides, enforcing visitor management Plan for the White Desert National Park. The aesthetic carrying capacity in these zones is significantly higher than in Premium Wilderness Zones, but specific limits will be set to maintain visitor expectations.

Access: Public access by vehicles is allowed, but restricted to designated and marked tracks. Access on foot or by camel is allowed every where.

Camping: Camping is allowed only in designated sites/zones which defined by the PAMU. For camel users and trekkers, camping is allowed every where in this zone.

Development: Restricted to installation of camping sites, trails, markers and other facilities to limit visitor impact.

Public use: Organized access within prescribed carrying capacity.

### **5.2 Patrolling**

Patrolling is the main and most basic management tool to be used by the PAMU. All WDNP staff regardless of specialization will be obliged to participate in patrolling activities. It is expected that all PAMU staff (with exception of the PA Manager) will spend between 25-50% of their working time on field patrols, spending the balance of the time on their particular area of specialty. Within NCS/EEAA patrolling is often considered to be synonymous with “monitoring”. It is important to distinguish between the two activities. Patrolling consists of regular or irregular inspection of the PA and its resources, either on land or in the sea. The main objectives of patrolling are to enforce PA regulations, discover and stop violations to PA regulations by PA users and to detect any notable, broad changes in the PA’s natural conditions, which might require further detailed investigation

and monitoring. Thus, patrolling intensity and frequency should be higher in PA zones where increased human activities are allowed (as in the Multiple Use, Traditional Use Zone and Buffer Zones).

### **5.3 Law Enforcement**

Enforcement of the provisions of Law 102 for 1983 and Law 4 for 1994 is an important obligation for the PAMU. PAMU have police power enabling them to take action against violators of the law. Close contact and coordination with local coast guard and police is important to have effective law enforcement. Law enforcement is one of the primary tasks of all rangers (regardless of specialization). All rangers should get basic training in enforcement procedures and expected professional behavior expected dealing with violators. Law enforcement is an important component of the patrolling activity, and patrolling teams should be prepared at all times to carry out their obligation in enforcing the law. The legal officer (ranger) will be responsible for follow up of prosecution procedures and will keep track of record of details and relevant paper work.

### **5.4 Environmental Impact Assessment (EIA)**

EIAs are one of the primary management tools for the PAMU. EIAs should be undertaken prior to the construction of any tourism facility inside the park. The EIAs should follow the Environmental Impact Assessment Guidelines (EEAA 1996) and any relevant guidelines. The EIA review Unit has two primary functions: (1) to carry out or contract EIA for activities or development within the boundaries of declared protected areas. (2) To review EIA documents forwarded from the EIA department of EEAA in areas adjacent or likely to have an impact on protected areas. In this case, the unit assesses the EIA document carries out field inspection and evaluation and returns the document to EEAA with the recommendation and requirements of the NCS. If agreed, the development or the activities are subject to follow up and monitoring by the relevant units. The final EIA should be reviewed, verified by and approved by the PAMU, to insure that information presented is accurate and that the project complies with the PA's regulations and management objectives.

### **5.5 Licensing / Permits**

Licenses are used to regulate certain long term and stable activities, where regulations do not need to be adjusted such as quarries and ecolodges. Permits are given for shorter periods where seasonal adjustments might need to be made on a short-term basis, such as for research, entering closed zones, etc. A comprehensive, consistent and stable licensing and permit system needs to be developed identifying activities, which need to be licensed, prerequisites for licensing, and arrangements with other stakeholders who should participate in the licensing process.

### **5.6 Reporting**

Reporting is an important activity for the PAMU. It serves to inform the central offices of NCS of progress made, problems and needs, and lets the PAMU to take stock on a regular basis of its achievements and ability to meeting the PA management objectives. All PAMU staff will submit a monthly report to the PAMU Manager by the 28th of every month. Community Guard reports will be collected by visiting Rangers on a monthly basis. The PAMU manager will be expected to submit the PAMU report (according to NCS specified format) to the South Sinai headquarter office in Sharm and NCS head office in Cairo by the 1st of each month.

### **5.7 Public Education and Information**

Public education is one of the most important management tools in the PA, which seeks to increase public awareness and stakeholder support. Public information is important to notify users of the PA regulations and restrictions. The target audiences are indigenous communities, tour operators, tourists, local, regional and national authorities, hotels, investors and schoolchildren. Particulars of public education and information activities should be worked out in a detailed Public Awareness Strategy to be established by the PAMU. Short-term activities should include direct communication between PAMU and the primary stakeholders in WDNP, publishing a broacher and establishing signage in the PA.

### **5.8 Signs and Signposting**

Signposting of a PA is one of the principal elements needed to guide visitors and residents through the area, making them aware of the PA's existence and particular places and facilities. Signs would need to be posted throughout WDNP as a means to inform and educate visitors. Three types of signs will be used: to inform visitors and other users of WDNP of the boundaries of the PA, signs with instructions and prohibitions, and signs, which inform visitors about facts of educational value or points of interest.